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Directive 056

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Energy Development Applications and Schedules

The Energy Resources Conservation Board (ERCB/Board) has approved this directive on July 14, 2008.

Dan McFadyen
Chairman

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Section 1 Introduction

1.1 Purpose of This Directive

The Energy Resources Conservation Board (ERCB) *Directive 056: Energy Development Applications and Schedules* presents the requirements and procedures for filing a licence application to construct or operate any petroleum industry energy development that includes facilities, pipelines, or wells.

Directive 056 is incorporated by reference into the *Oil and Gas Conservation Regulations* (*OGCR*) and serves as an extensive reference document about the rules that govern energy development in Alberta. This directive is not all encompassing and may not cover all situations. Operators, licensees, and applicants must be familiar with all provincial and federal legislation related to energy development. If a unique situation arises for an energy development proposal not covered in this directive, contact ERCB Facilities Applications for further direction.

When an applicant files a licence application with the ERCB's Facilities Applications group, it makes a commitment that it understands and will follow the appropriate participant involvement, audit, and technical requirements for energy developments as described throughout *Directive 056*.

Directive 056 is both a procedural manual on how to file a licence application and a regulatory document on the licence application process. While *Directive 056* encompasses the legal requirements of all licensees under the *OGCR*, the *Pipeline Regulation*, and other regulations stipulated by the ERCB, approvals, or licences from other government agencies may be required outside the *Directive 056* licensing process.

1.2 What's New in *Directive 056*

The 2008 edition of *Directive 056* incorporates changes that have resulted from the introduction of other ERCB directives and numerous updates and clarifications that have been identified by stakeholders. A summary of the additions to this edition of *Directive 056* is found in Appendix 1.

1.2.1 For the Electronic User

Directive 056 is formatted with electronic links to assist users in moving quickly from one section to another, as well as linking to applicable regulations, Web sites, and publications recommended in the directive.

1.2.2 Electronic Application Submission

The Facilities Applications' EAS system is able to accept applications for wells and surface facilities. Pipeline applications cannot be submitted through EAS at this time. Although future development of EAS for pipelines is pending, pipeline applications must continue to be submitted on paper.

1.3 How to Use This Directive

The main sections of *Directive 056* are as follows:

- Section 2: Participant Involvement describes two tiers of personal consultation and notification—required and expected. In addition, this section lists the information an applicant must include as part of its public information package and describes the ERCB's suggested process for dealing with outstanding public or industry concerns/objections. Participant involvement requirements and expectations for specific licence application types are in Sections 5, 6, and 7.
- Section 3: Energy Development Licence Applications describes requirements and expectations that apply to all licence application types. This section also includes a self-disclosure process that provides applicants the opportunity to disclose incorrect pipeline and facility licence details that it has identified as incorrect on the licence. This process may also be used if a company wishes to disclose an existing unlicensed facility or manually disclose unlicensed pipeline/pipeline installation and submit an application for the required licence.
- Section 4: Application Audit Process gives an overview of the Facilities Applications' audit process and the audit requirements that apply generally to all applicants. Detailed audit document requirements for specific licence application types are in Sections 5, 6, and 7.
- Section 5: Facility Licence Applications describes the application procedures specific to applying for a facility licence. This section is followed by Schedule 2: Facility Licence Application, Schedule 2.1: Working Interest Participants—Facilities, Schedule 2.2: Gas Plants—Facilities, Schedule 2.3: H_2S Information—Facilities, and Schedule 2.4: Compressors/Pumps—Facilities.
- Section 6: Pipeline Licence Applications describes application procedures specific to applying for a pipeline or pipeline installation licence. This section is followed by Schedule 3: Pipeline Licence Application and Schedule 3.1: Pipeline Segment/Pipeline Installation Identification.
- Section 7: Well Licence Applications describes application procedures specific to applying for a well or multiwell licence. This section is followed by Schedule 4: Well Licence Application, Schedule 4.1: Working Interest Participants—Wells, Schedule 4.2: Multiwell Pad Location, and Schedule 4.3: Well H_2S Information.
- Section 8: Additional Application Requirements (Special Circumstances) describes additional application requirements specific to certain areas or circumstances.
- Appendices 1 through 13 contain supporting reference documentation.

1.4 Requirements, Enforcement, and Expectations

ERCB requirements and recommended practices are numbered sequentially within each section of *Directive 056*. "Must" indicates a requirement, and "recommends" and "expects" indicate a recommended practice. *Directive 056* differentiates between the concepts "requirement/must" and "expectation/should":

- Regulatory requirements are those rules that industry has an obligation to meet and against which Facilities Applications may take enforcement action in cases of noncompliance. Regulatory requirements are identified as "must" statements in the text.

- Regulatory expectations represent recommended best practices or guidelines. Regulatory expectations are identified as "expect" statements in the text. While enforcement action is not applicable, expectations should be given consideration.

Table 4.1: Consequences for unsatisfactory events is a comprehensive list of all enforceable items related to energy development licence applications covered in *Directive 056*. Individual unsatisfactory items and related enforcement are not identified elsewhere in the text.

1.5 Continuous Improvement

Facilities Applications gathers information on the efficiency and effectiveness of *Directive 056* and the licence application process through application auditing and data retention activities, as well as by soliciting feedback from stakeholders.

As part of this commitment to continuous improvement, Facilities Applications anticipates the evolution of the procedures described in *Directive 056* in order to meet and exceed the needs of all stakeholders.

1.6 *Directive 056* Help

Visit the ERCB's *Directive 056* Web page at http://www.ercb.ca/portal/server.pt/gateway/PTARGS_0_0_323_253_0_43/http%3B/ercbContent/publishedcontent/publish/ercb_home/industry_zone/rules__regulations__requirements/directives/directive056.aspx to link to frequently asked questions (FAQs), on-line schedules, and other information about ongoing *Directive 056* initiatives.

If after careful study, you have a specific question not covered in this directive or available as an FAQ, contact ERCB Facilities Applications at

Phone: 403-297-4369
Fax: 403-297-4117
E-mail: Directive56.help@ercb.ca

Section 2 Participant Involvement

2.1 Overview

"Participant involvement" is an umbrella term encompassing all aspects of public, industry, and regulator interactions and communications. While the three main participant groups in energy development are industry, the public, and the ERCB, it is recognized that other groups also have a stake in energy development.

While the outcomes of most participant involvement programs are successful, *Directive 056* provides the energy industry with requirements and expectations to assist industry in its participant involvement efforts. Applicants must consider requirements and expectations both in advance of submitting an application for energy development and throughout the life of that development.

Most land in Alberta carries two titles and two sets of rights. The surface title gives the landowner control of the land's surface and the right to work it. The mineral title gives the company or the person who owns the minerals under the land the right to explore for oil and gas.

Industry is required to develop an effective participant involvement program that includes parties whose rights may be directly and adversely affected by the nature and extent of a proposed application. The development and implementation of this program must occur prior to the filing of an application to Facilities Applications and include distributing the applicant's information package and the required ERCB publications, responding to questions and concerns, discussing options, alternatives, and mitigating measures, and seeking confirmation of nonobjection through cooperative efforts. Industry is also expected to be sensitive to the timing constraints on the public (e.g., trapper, planting, harvesting, and calving seasons and statutory holidays).

The public is strongly encouraged to participate in ongoing issue identification, problem solving, and planning with respect to local energy developments. Early involvement in informal discussions with industry may lead to greater influence on project planning and mitigation of impacts. The public is also expected to be sensitive to the timing constraints on the applicant.

Participant involvement does not end with the issuance of a licence; it must continue throughout the life of a project. The development and creation of synergy groups at an early stage of the participant involvement program, especially in highly developed areas, will assist in fostering a collective and amenable approach to energy developments in the area.

All requirements and expectations detailed in this section apply to personal consultation and notification with all potentially directly and adversely affected persons, including First Nations and Métis. These requirements and expectations apply to the licensing of all new energy developments and all modifications to existing energy developments, as covered in *Directive 056*.

The ERCB notes that the Alberta Government issued its *First Nations Consultation Policy on Land Management and Resource Development* on May 16, 2005. In the policy, the Alberta Government stated that it will develop consultation guidelines to address specific questions about how consultation for land management and resource development should occur in relation to specific activities. The ERCB expects that all industry applicants will adhere to this policy and, when published, the consultation guidelines.

A discussion of the concept and employment of participant involvement programs is in Appendix 12.

2.2 Planning a Participant Involvement Program

Directive 056 sets out the consultation and notification requirements for the various energy developments in Tables 5.1, 5.4, 6.1, 6.2, and 7.1. These tables provide industry with a starting point for developing a participant involvement program and, as such, should not be viewed as the maximum. It is industry's responsibility to assess the area beyond the specified distance to determine if the radius of investigation recommended by *Directive 056* should be expanded. It may be necessary to increase the radius to include public interest groups or others who have expressed an interest in development in the area.

Local authorities and Alberta Sustainable Resource Development (SRD) play an important part in the plan for orderly land use and should be involved at an early stage in planning an energy development and participant involvement program. Additionally, local authorities, ERCB Field Centre staff, and the applicant's previous knowledge of the area may help identify needs in the community.

Project-specific participant involvement requirements are given in Sections 5.8, 6.8, and 7.9.

2.2.1 Who to Include

Numbered statements represent requirements and expectations (see Section 1.4).

1) The applicant must develop and complete the participant involvement program prior to filing an energy development application.
2) The applicant must ensure that its participant involvement program includes those parties within the radius identified by Tables 5.1, 5.4, 6.1, 6.2, and 7.1.
3) The applicant must include all parties whose rights may be directly and adversely affected. This includes parties with a direct interest in land, such as landowners, residents, occupants, other affected industry players, local authorities, municipalities, and other parties who have a right to conduct an activity on the land, such as Crown disposition holders.
4) The applicant must also include those people that it is aware of who have special needs or concerns and reside beyond the consultation and notification radius indicated in Tables 5.1, 6.1, and 7.1.
5) The applicant must allow participants a minimum of 14 calendar days to receive, consider, and respond to notification of the proposed development. The applicant may file an application prior to the 14-calendar-day period if certain conditions have been met. Refer to Section 2.3.2.
6) The applicant is expected to communicate with local residents and other operators and to develop an effective participant involvement program engaging both

potentially directly and adversely affected and interested parties at an early stage of planning.

7) The applicant is expected to consult with or to notify other parties that express an interest in the proposed development, whether located inside or outside the radius outlined in Tables 5.1, 5.4, 6.1, 6.2, and 7.1, and allow them the opportunity to obtain information specific to the proposed energy development and to understand its possible impacts.

8) The applicant is expected to document commitments made and have a process in place to monitor and follow up on commitments.

9) The applicant is expected to have consideration for the timing constraints on the public (e.g., planting, harvesting, and calving seasons and statutory holidays).

10) The applicant is expected to minimize the cumulative impacts of energy development and to show that they have applied good planning practices with respect to the public and the environment.

11) If the proposed development is part of a larger project, the applicant is expected to discuss the entire project and explain how it complements other energy development in the area.

12) During the planning of its participant involvement program, the applicant will have assessed its need to reach the broader public and may determine that an information session or public open house meeting is required. When holding broader public meetings or open houses, the applicant must disclose the same project-specific information as it would to those involved in personal consultation and notification. However, information sessions or public open houses may not be a substitute for meeting consultation requirements. Contact the ERCB for advice on how to best proceed.

In situations where it is intended to test a proposed well by flaring or incinerating gas, the applicants should consider expanding the resident notification to the distances specified in *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting* for well test flaring:

- 1.5 kilometres (km) for oil wells,

- 1.5 km for gas wells containing less than 10.0 moles per kilomole (mol/kmol) of hydrogen sulphide (H_2S), and

- 3.0 km for gas wells where the gas contains greater than or equal to 10.0 mol/kmol H_2S.

2.2.2 What Information to Disclose

13) Information packages must be developed and distributed to all parties included in the participant involvement program.

    The ERCB public information documents include

    - letter from the Chairman of the ERCB,

    - the ERCB brochure *Understanding Oil and Gas Development in Alberta,*

- the ERCB publication *EnerFAQs No. 7*: *Proposed Oil and Gas Development: A Landowner's Guide*, and
- ERCB EnerFAQs publications that relate to the type of energy development proposed (i.e., facility, pipeline, or well) (see Appendix 11).

14) The applicant's project-specific information package must provide the specific details of the proposed energy development.

15) The applicant must use appropriate language and terminology in the written materials so that the participants can clearly understand the details of the proposed development and the impact(s) it may have upon them.

16) The following details must be included in the applicant's project-specific information package:

    a) applicant name and contact numbers for further information,

    b) emergency contact number of the applicant/operator,

    c) location of proposed energy development,

    d) a description (category type) of the proposed energy development (e.g., well with no H_2S, coalbed methane well, oil satellite with less than 1 tonne per day sulphur inlet),

    e) need for the proposed development and explanation of how it fits with existing and future plans,

    f) type of substance(s) that will be processed, transported, or drilled for,

    g) discussion of the presence of H_2S and associated setbacks as detailed in *Interim Directive (ID) 97-06: Sour Well Licensing and Drilling Requirements* and Tables 5.6, 6.3, and 7.5,

    h) discussion of the potential restrictions regarding developing lands adjacent to the proposed development, such as setbacks (*OGCR 2.110* and *AR 43/2002; Alberta Subdivision and Development Regulation 10* and *11*),

    i) description of proposed on-site equipment,

    j) a description of the continuous flaring, incinerating, and/or venting that meets the information requirements of *Directive 060*,

    k) potential sources of emissions and odours during normal operating conditions (including trucking operations) and measures to control or eliminate them,

    l) proposed project schedule for construction and start-up,

    m) anticipated noise level and description of proposed mitigative measures, if required,

    n) traffic impacts (types of vehicular traffic to be expected, duration, frequency, and dust control measures),

    o) the participants' location relative to the emergency planning zone (EPZ) and whether they are inside or outside the EPZ (see *Directive 071: Emergency Preparedness and Response Requirements for the Upstream Petroleum Industry*),

    p) derrick height in notification to private unregistered and unlighted airstrips when required, and

q) the list of available ERCB public information documents and their availability from the applicant:

- brochure *Understanding Oil and Gas Development in Alberta*
- *EnerFAQs No. 4: All About Critical Sour Wells, No. 5: Explaining ERCB Setbacks, No. 6: Flaring and Incineration, 7: Proposed Oil and Gas Development: A Landowner's Guide, No. 8: Coalbed Methane, No. 9: The ERCB and You: Agreements, Commitments, and Conditions, No. 10: Public Health and Safety: Roles and Responsibilities of Agencies that Regulate Upstream Oil and Gas, and No. 11: All About Appropriate Dispute Resolution (ADR)*

  The EnerFAQs series is revised regularly. See the *Directive 056* Web page for the most current version.

17) If any of the above project details are not applicable to the proposed energy development, the applicant's project-specific information letter must explain why the detail is not applicable.

18) The applicant is expected to include any other information that would assist the participant in understanding the proposed development (e.g., soil information, water well testing, maps).

2.2.3 Personal Information

Applicants are reminded of their obligations under the *Personal Information Protection Act* (*PIPA*). That includes disclosing the need and purpose for collecting any personal information, the circumstances under which this information will be disclosed, and details regarding the security, retention, and ultimately the destruction of this information. The name of the person to be contacted regarding personal information collection and the company's privacy policy should also be provided, and all of these details should be consistent with the applicant's established privacy policy.

2.3 Implementing the Participant Involvement Program

19) The development and implementation of the participant involvement program must occur prior to the filing of an application with ERCB Facilities Applications. This includes

- the distribution of a project-specific information package and the ERCB public information documents,
- responding to questions and concerns,
- discussing options, alternatives, and mitigating measures, and
- seeking confirmation of nonobjection through cooperative efforts.

20) The applicant must always close the participant involvement loop, even if the application is withdrawn. This means that all parties included in the participant involvement program must continue to be included in all correspondence and information updates during the development, implementation, and outcome of the proposed project.

a) If the scope of the project changes, such as a change to the surface location, the applicant must notify all parties included in the initial consultation program of the proposed change.

    i) If the project change results in the inclusion of new participants, the applicant must meet all participant involvement requirements in regard to the new participants as well.

b) The applicant must advise all parties (public and industry) if it has decided not to proceed with the proposed project after having initiated a participant involvement program.

c) The applicant must provide notification to all participants (public, industry, and regulatory) when a change in circumstances does not allow previous commitments to be met.

2.3.1 Personal Consultation and Confirmation of Nonobjection

Personal consultation is intended to inform parties whose rights may be directly and adversely affected by the nature and extent of the proposed application. Questions raised during the discussion of the proposed energy development should alert the applicant to potential concerns/objections. Through discussions, the applicant may be able to confirm nonobjection; if not, the applicant must file a nonroutine application.

21) The applicant must fulfill the requirements for the radius of personal consultation and confirmation of nonobjection set out in Tables 5.1, 6.1, 6.2, and 7.1. It is the applicant's responsibility to determine if the recommended radius needs to be expanded for the proposed development.

22) The applicant must conduct face-to-face visits or telephone conversations with all identified parties.

23) A company representative with full knowledge of the overall plans and direction of future development options must be available to answer questions either in person or by telephone.

24) The applicant must use appropriate language and terminology both in conversations and written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.

25) The applicant must provide information packages to those persons whose rights may be directly and adversely affected, as set out in Tables 5.1, 6.1, 6.2, and 7.1, and be prepared to discuss the project as necessary.

26) The applicant must provide the following information when personal consultation is required:

    a) the applicant's project-specific information package,

    b) the letter from the Chairman of the ERCB,

    c) the ERCB brochure *Understanding Oil and Gas Development in Alberta*, and

    d) the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*.

27) The applicant must offer the participants copies of other ERCB EnerFAQs publications that relate to the proposed energy development and document its distribution for audit purposes (see Appendix 11).

28) The required information packages may be distributed during the personal consultation meeting or forwarded later as follow-up to the personal consultation phone call/meeting. Packages may be forwarded by courier, mail, fax, e-mail, or other means as agreed upon by the parties.

29) If the participant does not want a copy of the required information package(s), the applicant must document the refusal for audit purposes. The refusal of an information package does not require a nonroutine application to be submitted.

30) When confirmation of nonobjection is required, the applicant must ensure that there are no outstanding concerns/objections to the ERCB issuing a licence for the proposed energy development.

31) The applicant must keep a log of the dates that personal consultation and confirmation of nonobjection occurred, when materials were distributed/received, and to whom.

32) The applicant is accountable for the outcomes of personal consultation completed on its behalf by contracted personnel. Therefore, the applicant must ensure that individuals conducting personal consultation on its behalf

    a) possess a sound understanding of regulatory requirements and expectations for participant involvement, and

    b) use appropriate language and terminology in the written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.

2.3.2 Notification

Notification differs from personal consultation in that the initial communication may take place through written correspondence rather than face to face or in telephone conversations.

Determining that participants have received information packages will reduce the possibility of late (postapproval) concerns/objections and requests for review under the *Energy Resources Conservation Act,* Sections 39 or 40. Applicants may choose to use registered mail or courier to ensure that the participants receive the information packages or to document attempts made to involve the participants.

33) The applicant must fulfill the notification requirements for the radius of notification set out in Tables 5.1, 5.4, 6.1, 6.2, and 7.1. It is the applicant's responsibility to determine if the recommended radius of notification needs to be expanded for the proposed development.

34) If the notified party indicates it would prefer personal consultation, a company representative with full knowledge of the overall plans and direction of future development options must be available to answer questions either in person or by telephone.

35) The applicant must use appropriate language and terminology in conversations and written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.

36) The applicant must provide a copy of its project-specific information package and the letter from the Chairman of the ERCB and offer the participants copies of

    a) the ERCB brochure *Understanding Oil and Gas Development in Alberta,*

b) the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*, and

c) the ERCB EnerFAQs listed in Appendix 11.

37) The applicant must allow a minimum of 14 calendar days for the participants to receive, consider, and respond to the notification and be prepared to discuss the project as necessary.

a) If the applicant has fulfilled the personal consultation requirements in lieu of the notification requirements, the applicant may file the energy development application once it has completed personal consultation and acquired confirmation of nonobjection.

38) The applicant is accountable for the outcome of notification completed on its behalf by contracted personnel. Therefore, the applicant must ensure that individuals conducting notification on its behalf

a) possess a sound understanding of regulatory requirements and expectations for participant involvement, and

b) use appropriate language and terminology in the written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.

2.3.2.1 Extended Absences

Directive 056 requires applicants to notify all potentially directly and adversely affected parties. In some instances landowners and residents may be away for extended periods, such as on vacation, or they may reside out of the province.

39) When the applicant must personally consult with participants in the notification radius and is unable to do so, the applicant is expected to use courier or registered mail to send letters and information packages.

40) If the applicant is unable to fulfill all *Directive 056* participant involvement requirements, it must file a nonroutine application and demonstrate the efforts made to contact the participants in the notification radius.

2.3.3 Addressing Concerns/Objections and Appropriate Dispute Resolution

Directive 056 recommends that all applicants address and attempt to resolve outstanding concerns/objections prior to filing the application with ERCB Facilities Applications.

41) At any time during the planning, construction, and operation of a project, the applicant must attempt to address outstanding concerns/objections raised by potentially affected or interested parties

a) to reconcile differences where possible, and

b) to obtain confirmation of nonobjection.

42) The applicant must attempt to address all questions and concerns/objections regarding the proposed development prior to filing and during the review of the energy development application, regardless of whether the party involved is inside or outside the radius of Tables 5.1, 5.4, 6.1, 6.2, and 7.1.

To address outstanding concerns/objections, the applicant may choose to

- meet with objectors and attempt to resolve issues through informal "kitchen table" discussions,
- engage the ERCB Appropriate Dispute Resolution (ADR) program and contact the ERCB's Facilitation Team to request staff facilitation,
- pursue resolution through a more formalized third-party mediation process, or
- request a Board disposition, such as a public hearing.

The participant involvement process is fully described in Appendix 12.

If the applicant pursues staff facilitation and the concerns/objections are subsequently resolved and confirmation of nonobjection is obtained where required, the applicant may file a routine application (see Section 3.8.1). However, if the application is nonroutine (see Section 3.8.2) for technical reasons or it is an ERCB-deemed nonroutine application, the applicant must file a nonroutine application.

43) If concerns/objections cannot be resolved through staff facilitation and the applicant intends to proceed with the project, the applicant must file a nonroutine application for reasons of participant involvement. The applicant may request an ERCB hearing in parallel with the ADR process.

44) When filing a nonroutine application for reasons of participant involvement, the applicant must include a written summary of the outstanding concerns/objections for ERCB review and consideration (see Sections 5.14, 6.11, and 7.13).

2.3.3.1 Compensation

Matters of compensation are not within the ERCB's jurisdiction. If a surface rights agreement is unobtainable from the landowner solely due to compensation issues, the applicant may request that the ERCB issue the licence to allow the applicant to apply to the Surface Rights Board (SRB) for a right-of-entry order.

45) The applicant may file a routine licence application if the landowner confirms in writing that compensation is the only issue and there are no concerns/objections to the ERCB issuing a licence, so that the parties may proceed to the SRB.

46) If landowner confirmation as described above cannot be obtained, the applicant must file a nonroutine application.

47) The applicant must file a nonroutine application if there are unresolved compensation issues identified by participants other than the surface landowner.

2.4 Documenting the Participant Involvement Program

It is in the applicant's best interest to understand the audit requirements for participant involvement. The applicant should develop an audit documentation package early and build it throughout the process.

48) The applicant must retain communication logs, records of confirmation of nonobjection letters, and registered mail/courier tracking for audit purposes.

49) The applicant must retain personal consultation and notification documents for audit purposes.

50) The applicant must retain documentation of resolution of concerns/objections that occurred prior to filing an application.

Additional discussion related to documentation requirements are in Sections 5, 6, and 7.

2.5 Expiry of the Personal Consultation and Notification Program

All facility, pipeline, and well licences issued under *Directive 056* expire 1 year from date of issue if not acted on (i.e., if clearing or construction has not begun). If a licence expires, any associated personal consultation and notification also expires.

51) If a licence expires and the licensee intends to proceed with the project, the licensee must submit a new licence application to ERCB Facilities Applications and must consult again on the proposed project or be able to demonstrate that personal consultation and/or notification updates have been conducted.

52) A personal consultation and notification program is only valid for one energy development. Therefore, the applicant must initiate a new or updated personal consultation and notification program for additional applications and licence amendment applications.

In some instances the complexity of a project may have required that the personal consultation and notification be initiated well in advance of the licence application being submitted to Facilities Applications.

53) The participant involvement program must be current when the application is filed regardless of when the program was initiated.

54) If the personal consultation and notification program is initiated well in advance of the application submission date, the applicant is required to continue personal consultation and notification throughout the application process by providing participants with status updates on the proposed development.

If the ERCB determines that the initial communication was incomplete or that the consultation is no longer current, the applicant may be directed to fulfill participant involvement requirements.

55) In cases where concerns/objections have been expressed, the applicant is expected to close the participant involvement loop by explaining the outcome of the application to those parties included in the participant involvement program. This should include what will be done next and an explanation of how the applicant will meet any commitments made during the participant involvement process, with an emphasis on ongoing information sharing.

56) The applicant must attempt to address concerns/objections and answer questions raised by members of the public, industry, government representatives, First Nations, Métis, and other interested parties throughout the life of a project.

Section 3 Energy Development Licence Applications (Schedule 1)

3.1 Overview

This section describes the energy development licensing application process.

All applicants have the responsibility to understand and comply with legislative and regulatory requirements. The ERCB continues to work with applicants new to the licensing process or experiencing difficulties.

Schedule 1 is required for all energy development applications processed through *Directive 056*, regardless of type or size of project. Each applicant must submit Schedule 1 as the cover schedule, along with the facility, pipeline, or well licence applications.

All energy development applications are filed based on category (letter) and type (number). There are four categories of energy developments, B through E, based on increasing sulphur inlet rates, H_2S release volumes, and H_2S release rates for the proposed facilities, pipelines, and wells. Each application category is subdivided into application types that are assigned a three-digit code.

Category designations also give an applicant the option of applying for multiple facilities, pipelines, and wells together as a project submission. A project is defined as a network of facilities, pipelines, and/or wells that connect to a common facility. A project submission may consist of a single licence application or of multiple licence applications of related facilities, pipelines, and wells. A project submission must be submitted under one applicant company name.

If an application is incomplete, the ERCB closes the file and advises the person identified as the Contact in writing of the reason for the closure. To reapply, the applicant must submit a new, complete licence application after having met all applicable requirements.

3.2 Considerations Prior to Filing a Licence Application

There are many factors to consider prior to filing an energy development licence application (see Figure 3.1). For instance, have all mineral rights been secured? Are there outstanding concerns/objections to the licence application? Are licences/approvals required from other agencies?

Numbered statements represent requirements and expectations (see Section 1.4).

1) Prior to submitting an energy development licence application to ERCB Facilities Applications, the applicant must

    a) retain documentation of contact with or approval from other parties, including those identified in Tables 5.1, 5.4, 6.1, 6.2, and 7.1, for ERCB audit purposes;

    b) obtain an ERCB business associate (BA) code from the Petroleum Registry of Alberta (Section 3.2.1) and a licensee eligibility attribute from ERCB Corporate Compliance (see *Directive 067: Applying for Approval to Hold ERCB Licences)*—all applicants/consultants must have a BA code;

    c) retain documentation to support the applicant's participant involvement program (Section 2 and Tables 5.1, 5.4, 6.1, 6.2, and 7.1); and

d) retain copies of all design work and other supporting documentation for the application as required.

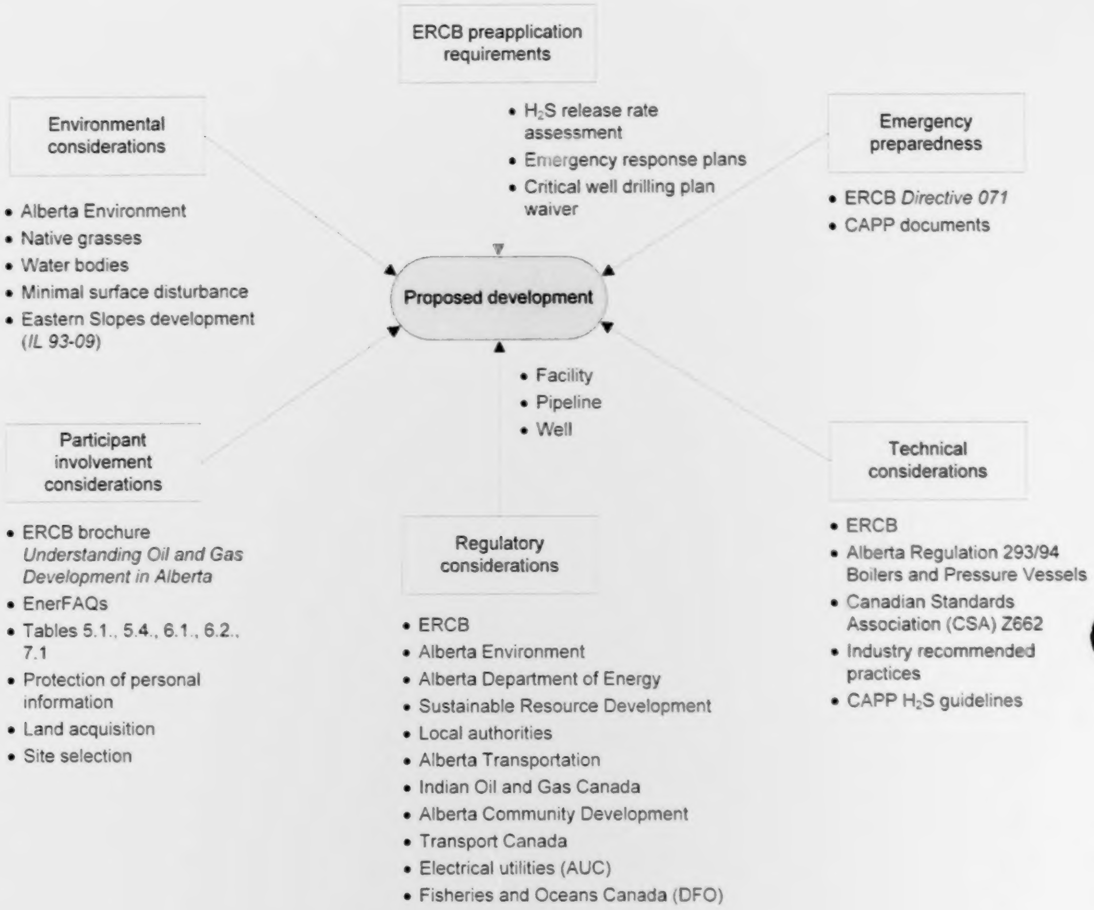

ERCB preapplication requirements
• H_2S release rate assessment
• Emergency response plans
• Critical well drilling plan waiver
Environmental considerations
• Alberta Environment
• Native grasses
• Water bodies
• Minimal surface disturbance
• Eastern Slopes development (IL 93-09)
Emergency preparedness
• ERCB Directive 071
• CAPP documents
Proposed development
• Facility
• Pipeline
• Well
Participant involvement considerations
• ERCB brochure Understanding Oil and Gas Development in Alberta
• EnerFAQs
• Tables 5.1., 5.4., 6.1., 6.2., 7.1
• Protection of personal information
• Land acquisition
• Site selection
Regulatory considerations
• ERCB
• Alberta Environment
• Alberta Department of Energy
• Sustainable Resource Development
• Local authorities
• Alberta Transportation
• Indian Oil and Gas Canada
• Alberta Community Development
• Transport Canada
• Electrical utilities (AUC)
• Fisheries and Oceans Canada (DFO)
Technical considerations
• ERCB
• Alberta Regulation 293/94 Boilers and Pressure Vessels
• Canadian Standards Association (CSA) Z662
• Industry recommended practices
• CAPP H_2S guidelines

Figure 3.1. Considerations prior to filing a licence application

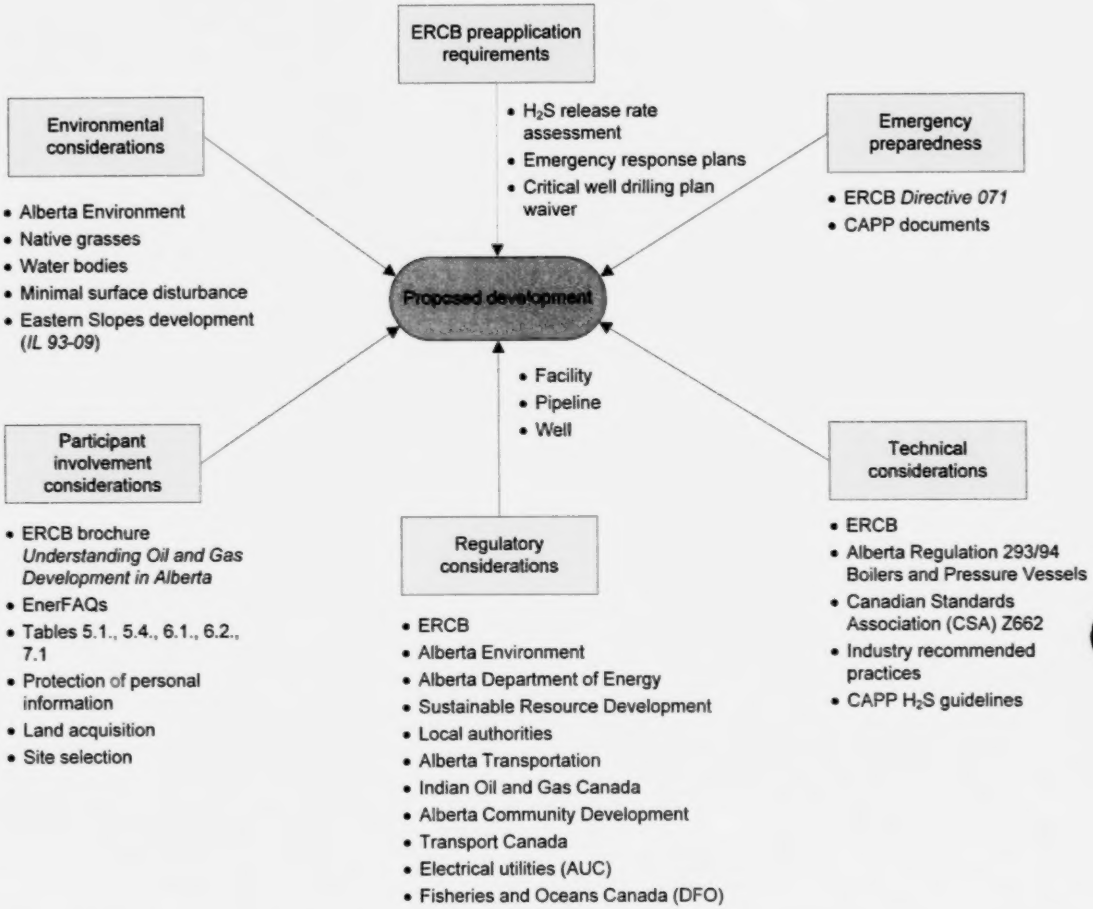
3.2.1 Business Associate Codes

BA codes, referred to as ERCB Identification or Operator Codes in Section 21(1) of the *Oil and Gas Conservation Act* (OGCA), are obtained from the Petroleum Registry of Alberta. The ERCB cannot consider a licence application unless the applicant and consultant each has a valid BA code and the applicant has obtained a licensee eligibility attribute from ERCB Corporate Compliance (see *Directive 067*).

3.2.2 Prelicensing Approvals/Waivers

An applicant may seek a prelicensing ruling from the ERCB for the following components of a well licence application:

d) retain copies of all design work and other supporting documentation for the application as required.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3.2.2 Prelicensing Approvals/Waivers

An applicant may seek a prelicensing ruling from the ERCB for the following components of a well licence application:

Prelicensing approvals/waivers	**ERCB contact**	**Further information**
H_2S release rate assessment	Resources Branch, Geology and Reserves	*Directive 056*, Section 7.10.15
Emergency response planning	Public Safety/Field Surveillance Branch, Emergency Planning and Assessment Section	*Directive 071*
Critical well drilling plan waivers	Compliance, Environment, and Operations Branch	*ID 97-06 and Directive 036: Drilling Blowout Prevention Requirements and Procedures* IRP Volume 1: *Industry Recommended Practices for Drilling Critical Sour Wells*
Open-hole logging waiver	Resources Branch, Geology and Reserves	
Surface casing waiver	Compliance, Environment, and Operations Branch	*Directive 056*, Section 7.10.10 *Directive 008*
Drill cuttings waiver	Resources Branch, Geology and Reserves	*Directive 056*, Section 7.10.8

Other types of waivers for well, facility, and pipeline requirements (e.g., equipment spacing, measurement) are captured through the nonroutine licence application process (Section 3.8.2).

2) When filing an application that has a prelicensing approval/waiver for surface casing or drill cuttings, the applicant must file a nonroutine application and include a copy of the approval/waiver issued.

3.3 Applicant Responsibilities

An applicant is responsible for all aspects of application development, including planning the energy development, planning and conducting participant involvement, retaining supporting documents, and submitting the application. Once a licence application is approved by the ERCB, the company becomes a licensee and bears responsibility for the construction, installation, and safe operation of the facility, pipeline, and/or well. The licensee is also responsible for decommissioning, dismantling, abandonment, and reclamation.

3) An applicant must obtain the appropriate ERCB licence(s) prior to commencing any site preparation, construction, or operation.

   Applicants are not permitted to initiate prelease construction prior to acquiring an ERCB licence. Applicants must limit prelease activities to surveying and obtaining soil samples through shovel digs or auger samples no more than 5 to 8 centimetres (cm) in diameter.

4) The applicant/licensee is responsible for outcomes of actions conducted on its behalf by contracted personnel.

5) The applicant/licensee is expected to maintain an ongoing dialogue with potentially directly and adversely affected parties during the life of the project.

3.4 Submission Procedures

The ERCB began accepting electronic submissions for well licence applications through the ERCB's Electronic Applications Submission (EAS) system in October 2003. With the latest release of the EAS system, applicants can now complete electronic submissions for surface facilities. Applicants are encouraged to use the electronic submission process for surface facilities.

The pipeline/pipeline installation licence application phase of EAS has not been implemented. Applicants must continue to submit pipeline licence applications and all well, facility, and pipeline audit submissions via mail or courier to

Energy Resources Conservation Board
Facilities Applications
640 – 5 Avenue S.W.
Calgary, AB T2P 3G4

Copies of all schedules that apply to energy development applications are in the applicable sections of *Directive 056*.

6) For data retention purposes, the applicant must ensure that schedules are printed on one side only.

3.5 Licence Amendments

A licence amendment application is a change to a current licence. This includes the correction of inadvertent data errors and number transpositions. Additional details for licence amendments for each licence application type are in Sections 5, 6, and 7.

There is now a self-disclosure process available to licensees when pipeline/pipeline installation and facility licence details are incorrectly identified on the licence or if a company wishes to disclose an existing unlicensed facility or pipeline/pipeline installation (see Section 3.9).

3.6 Incomplete Licence Applications

The ERCB cannot process an incomplete licence application. If an application has minor deficiencies, staff may notify the applicant and request that corrections be submitted within two business days. For applications submitted through EAS, the application will be closed and the applicant will be required to submit a replacement application if it intends to proceed with the project.

In the case of significant deficiencies, ERCB Facilities Applications will notify the applicant in writing that the application is being closed and the reason for the closure. Closed applications are not returned to the applicant. The applicant may reapply by submitting a new, complete, and accurate energy development licence application to Facilities Applications.

7) Prior to reapplying, the applicant must assess the need to update its participant involvement program if a delay in filing or potential changes to the scope of the energy development require participant updates.

Significant deficiencies include situations where the applicant

- has not included supplementary information to support a nonroutine submission,
- has not answered an applicable question on a schedule,
- fails to respond to an ERCB request for additional information within the specified time,
- has submitted its application on vendor forms that do not match ERCB format and content,
- failed to submit all required schedules or attachments,
- has recorded three or more errors on a schedule, or
- has filed an application for an invalid category type.

If the applicant designates a consultant to prepare and file an application on its behalf, Facilities Applications staff may communicate with the consultant during the processing of the application.

3.7 Checking the Status of a Licence Application

An applicant may review the status of its licence application by accessing the Integrated Application Registry (IAR) on the ERCB Web site. IAR has an on-line help system to assist users in checking the status of a licence application.

3.8 ERCB Application Licensing Process

A licence issued under *Directive 056* is a licence to construct and operate a surface facility, pipeline, or well.

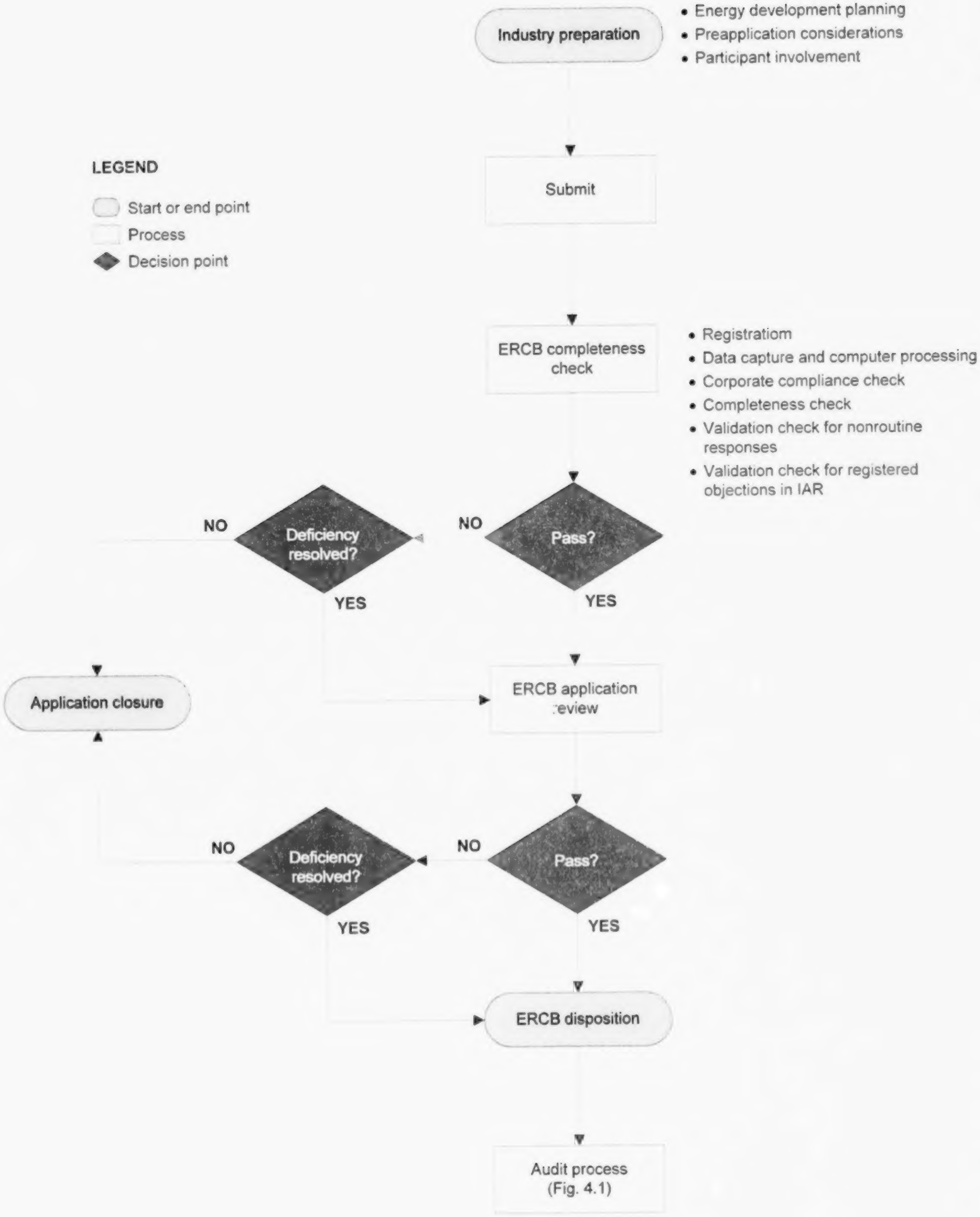
After Facilities Applications receives and registers an application, staff perform numerous electronic checks that determine the application's acceptability and the path for processing. This may include a preliminary technical screening that helps to identify issues that require further assessment.

All licence applications are submitted as either routine or nonroutine. An applicant chooses the type of application submission based on the responses entered on schedules. Responses on the schedules that are highlighted in bold type indicate that the applicant is filing a nonroutine application. Nonroutine applications are classified as either self-identified nonroutine or ERCB-designated nonroutine. Nonroutine licence applications are further designated as participant involvement nonroutine or technical nonroutine.

3.8.1 Routine Applications

Figure 3.2 shows ERCB Facilities Applications' routine application licensing process. An applicant files a routine application when

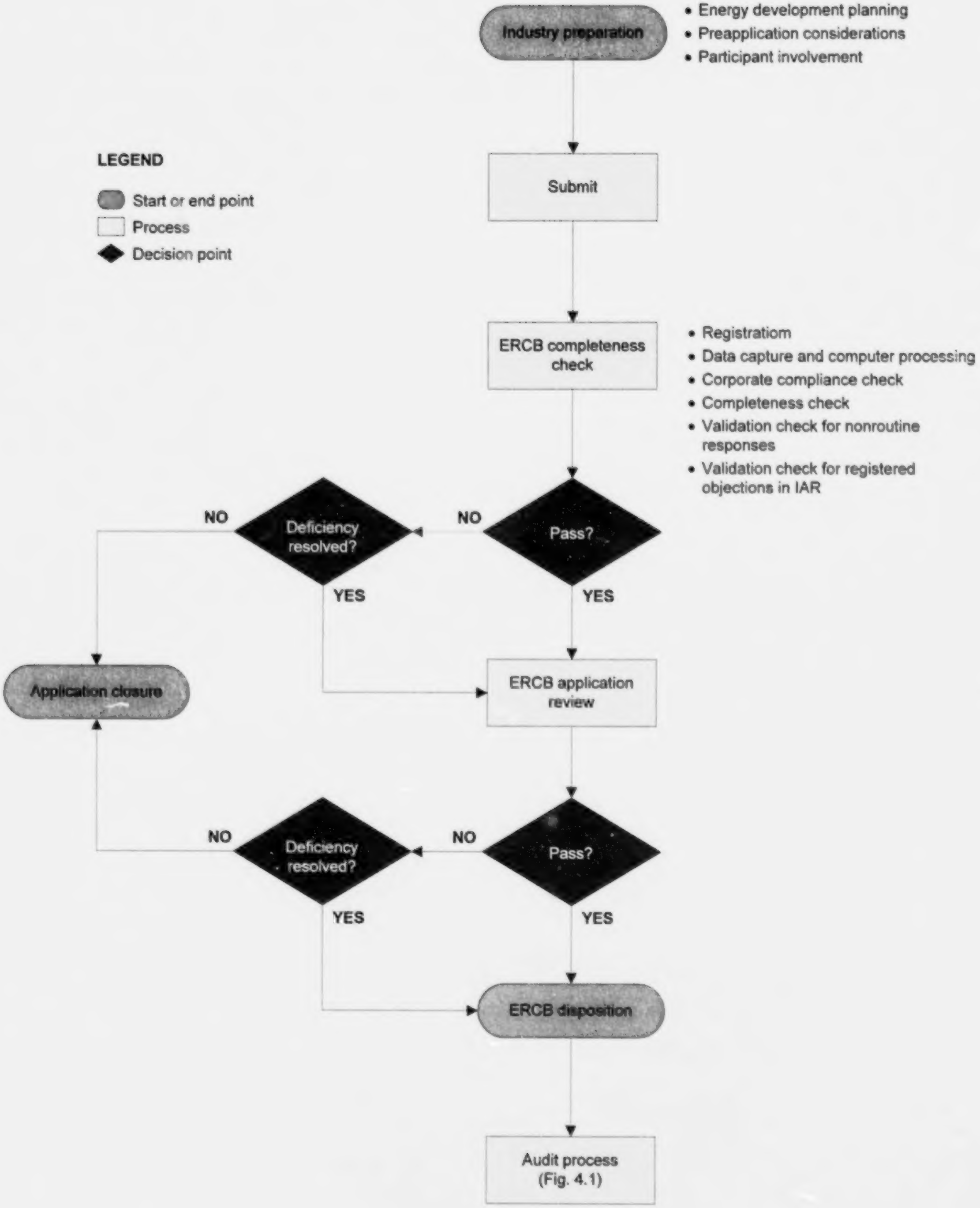
- supporting documentation demonstrates compliance with all technical and participant involvement requirements,
- there are no outstanding concerns/objections,
- the landowner agrees (in writing) to proceed to the Surface Rights Board, or
- a relaxation from regulatory requirements is not requested.


LEGEND
Start or end point
Process
Decision point
Industry preparation
Submit
ERCB completeness check
NO
Deficiency resolved?
NO
Pass?
YES
YES
Application closure
ERCB application review
NO
Deficiency resolved?
NO
Pass?
YES
YES
ERCB disposition
Audit process (Fig. 4.1)

- Energy development planning
- Preapplication considerations
- Participant involvement

- Registratiom
- Data capture and computer processing
- Corporate compliance check
- Completeness check
- Validation check for nonroutine responses
- Validation check for registered objections in IAR

Figure 3.2. Routine licence application process


Industry preparation
LEGEND
Start or end point
Process
Decision point
Submit
ERCB completeness check
NO
Deficiency resolved?
NO
Pass?
YES
YES
Application closure
ERCB application review
NO
Deficiency resolved?
NO
Pass?
YES
YES
ERCB disposition
Audit process (Fig. 4.1)

- Energy development planning
- Preapplication considerations
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- Validation check for registered objections in IAR

Figure 3.2. Routine licence application process

Supporting documentation is not required to be submitted with routine licence applications. However, this documentation will be required if the application is selected for an audit review. Routine applications are registered with ERCB Facilities Applications and entered into a database, through EAS or manually, to verify schedule data and ensure completeness and appropriate response. Schedules and attachments (including survey plans, process flow diagrams, and base maps) are manually reviewed for internal consistency and adherence to requirements, such as setbacks, survey data, and location of residents. Deficient applications are handled in accordance with Section 3.6.

Based on this review, a recommendation on the disposition of the application is made to an authorized ERCB signing designate, who further reviews each application before granting a licence.

3.8.2 Nonroutine Applications

Figure 3.3 shows Facilities Applications' nonroutine application licensing process. An application is considered nonroutine if the applicant cannot meet an ERCB requirement, chooses to apply for a relaxation from an ERCB requirement, or has been directed to file a nonroutine application by Facilities Applications.

8) All nonroutine applications must include the required documentation (see Sections 5.14, 6.11, and 7.13), an explanation of why the requirement will not be met, and alternative measures proposed to warrant relaxation of the requirement.

There are three types of nonroutine applications:

- Nonroutine—Participant Involvement
- Nonroutine—Technical
- Nonroutine—ERCB Designated

3.8.2.1 Nonroutine—Participant Involvement

9) The applicant must file a nonroutine licence application for reasons of participant involvement if
    a) public/industry consultation and notification requirements are not met,
    b) outstanding concerns/objections, whether inside or outside the distances outlined in Tables 5.1, 5.4, 6.1, 6.2, and 7.1 were received by the applicant during the participant involvement program or anytime prior to filing and remain unresolved, or
    c) the applicant is unable to obtain written confirmation from the landowner that the only outstanding concern is compensation.

3.8.2.2 Nonroutine—Technical

10) The applicant must file a nonroutine licence application for technical reasons if
    a) technical requirements are not met,
    b) a variance from regulatory requirements is requested, or
    c) the use of an unspecified method, process, or material is proposed.

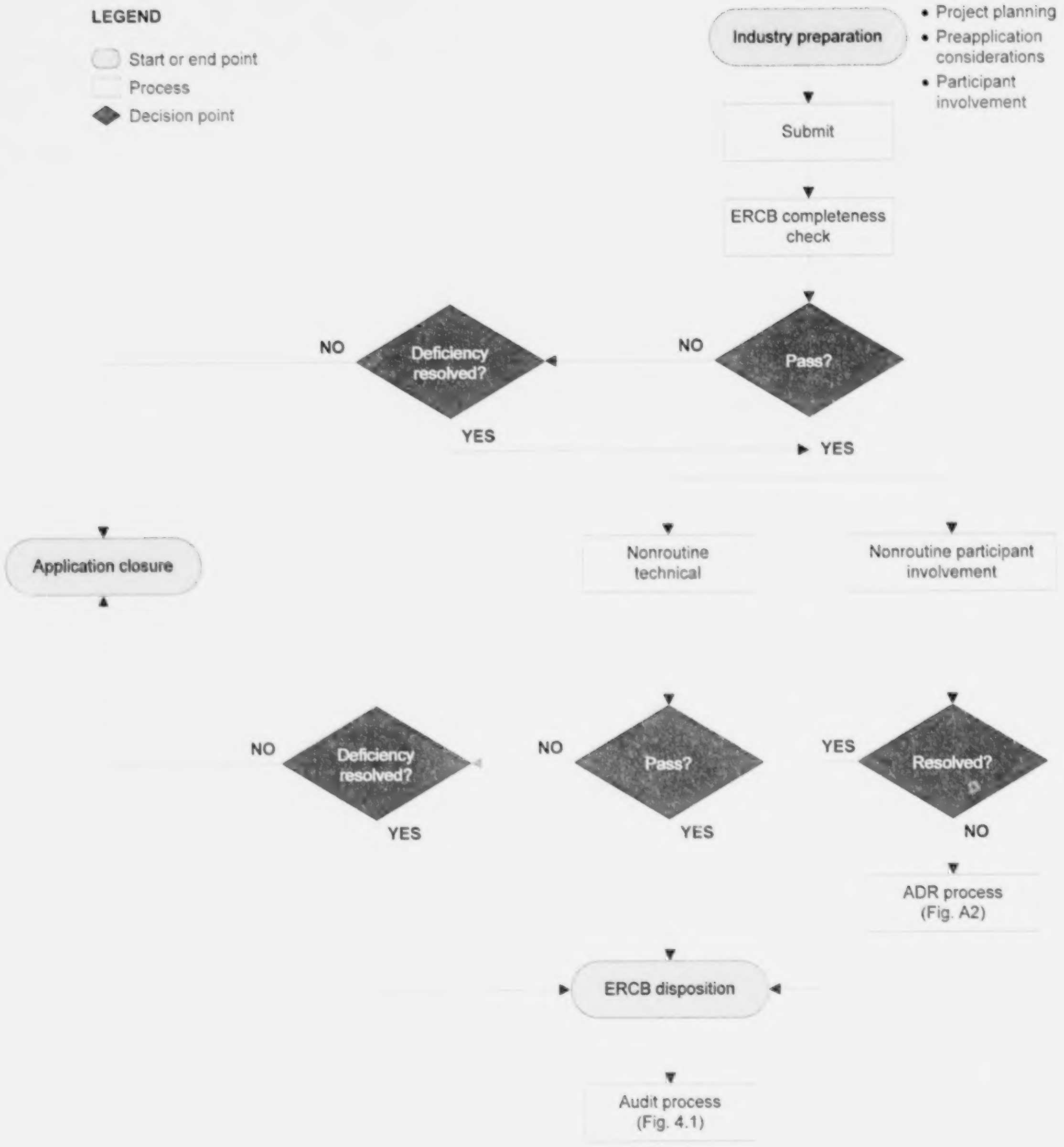

LEGEND
Start or end point
Process
Decision point
Industry preparation
Project planning
Preapplication considerations
Participant involvement
Submit
ERCB completeness check
Pass?
NO
YES
Deficiency resolved?
NO
YES
Application closure
Nonroutine technical
Nonroutine participant involvement
Pass?
NO
YES
Deficiency resolved?
NO
YES
Resolved?
YES
NO
ADR process (Fig. A2)
ERCB disposition
Audit process (Fig. 4.1)

Figure 3.3. Nonroutine licence application process

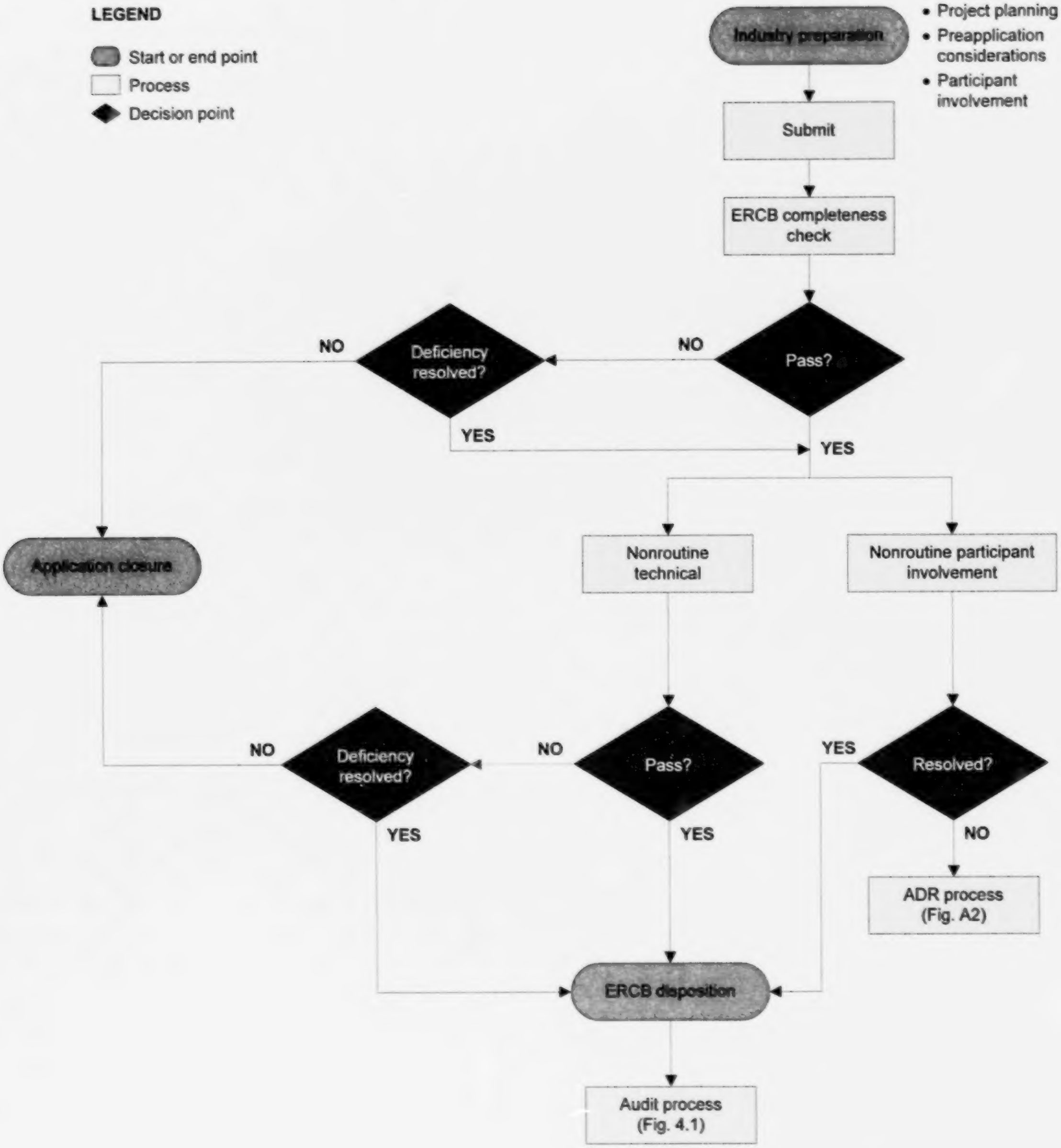

LEGEND
Start or end point
Process
Decision point
Industry preparation
Project planning
Preapplication considerations
Participant involvement
Submit
ERCB completeness check
Pass?
NO
YES
Deficiency resolved?
NO
YES
Application closure
Nonroutine technical
Nonroutine participant involvement
Pass?
NO
YES
Deficiency resolved?
NO
YES
Resolved?
YES
NO
ADR process (Fig. A2)
ERCB disposition
Audit process (Fig. 4.1)

Figure 3.3. Nonroutine licence application process

3.8.2.3 Nonroutine—ERCB Designated

11) The applicant must file a nonroutine licence application if
    a) so directed by the ERCB prior to submission,
    b) outstanding concerns/objections exist for an energy development proposal that does not require a licence under *Directive 056* (see Sections 5.5, 6.5, and 7.5), or
    c) the application is for
        i) Category E facilities and wells, or
        ii) new Category C and D gas processing plants

Furthermore, the ERCB may designate any routine licence application nonroutine if the application

- contains inconsistent technical information,
- has associated unresolved concerns/objections in IAR,
- is part of a project application proceeding to a hearing,
- involves sensitive geographic/environmental areas,
- is the first petroleum or industrial activity into an area, or
- is filed by a company with a "REFER" status (see ERCB Web site at http://www.ercb.ca under Industry Zone/Compliance Enforcement for more details).

If this occurs, the applicant is advised, given the reasons for the nonroutine designation, and directed to address the concerns. If the application was submitted routinely through EAS system, the application will be closed and the applicant will be required to resubmit the application nonroutinely if it intends to proceed with the project. In such cases, ERCB action may range from a clarifying phone call, to a partial or full prelicensing audit review of all supporting data, to the issuance of an ERCB notice (see the *Energy Resources Conservation Board Rules of Practice*).

3.9 Voluntary Self-Disclosure

As stated in *Directive 019: Compliance Assurance—Enforcement*, the ERCB's self-disclosure policy is intended to encourage licensees to proactively identify, report, and correct noncompliance. The Facilities Applications group has formalized a self-disclosure process on Schedule 1 in *Directive 056*, which provides applicants the opportunity to disclose incorrect facility or pipeline/pipeline installation licence details. This process may also be used where a company wishes to disclose an existing unlicensed facility or pipeline/pipeline installation and submit an application for the required licence. These types of applications will be considered routine except where a nonroutine issue as defined in Sections 3.8.2.2 and/or 3.8.2.3 is associated with the application.

New licence or licence amendment applications that do not involve a self-disclosure, may not be submitted under the same Schedule 1 with a self-disclosure application. An application to change licence details is considered a licence amendment application. An application for a previously unlicensed facility or pipeline/pipeline installation is considered to be an application for a new facility or for new pipeline/pipeline installation construction.

12) If a self-disclosure from a company requires a new facility or pipeline/pipeline installation licence to address the matter, a letter must be submitted with the associated application. The letter must include the following:

- details regarding the background and nature of the licensing issue,
- an explanation as to why the facility or pipeline was not licensed or licensed incorrectly, and
- a statement disclosing whether the company has received concerns or objections regarding the existing operations.

13) If a self-disclosure from a company requires an amendment to an existing facility or pipeline/pipeline installation licence to address the matter, a letter must be submitted with the associated application. The letter must include the following:

- an explanation of the need for the amendment and supporting details, and
- a statement disclosing whether the company has received concerns or objections regarding operations pertaining to the amendment.

Applicants may submit multiple self-disclosure applications under a single Schedule 1 for this process, and if circumstances are similar for all the applications, one letter of explanation is acceptable.

3.9.1 Self-Disclosure Applications and Participant Involvement Requirements

The self-disclosure process provides applicants the opportunity to disclose incorrect pipeline and facility licence details and to disclose and acquire licences for existing unlicensed facilities and pipelines/pipeline installations. This process must not be used to identify any participant involvement oversights related to an application. Applicants that have identified a participant involvement failure after application submission must contact the Facilities Applications Audit section directly to self-disclose participant involvement issues and obtain direction on how to proceed.

Self-disclosure applications for facilities or pipeline/pipeline installations that have been in existence and operating for several years without public concerns may not be required to fulfill all participant involvement requirements. Applicants should contact the Facilities Application Audit section for advice on how to proceed with the required application.

If there is no evidence that an initial participant involvement program was conducted prior to the construction of the facility or pipeline/pipeline installation, the applicant must indicate on the application schedules (Schedule 2 or Schedule 3) that public and/or industry consultation and notification requirements have not been met. If there is evidence that participant involvement work was completed prior to construction, the facility or pipeline/pipeline installation application may be submitted routinely. The applicant must keep the details of the participant involvement documentation on file and available should the file be selected for audit.

3.9.2 Self-Disclosure Application Processing Time

Applications submitted through this process are subject to the same processing procedures and validation checks as other applications and are required to meet standard application requirements. If the application is deficient, the applicant will be contacted and required to resubmit the application (see Section 3.6). Additional action may be taken by the ERCB to ensure that the licensing issue is resolved once it has been disclosed through this process.

3.9.3 Self-Disclosure Application for Well Licences

Well licence issues must not be disclosed through this process. Self-disclosure of well licensing issues must be directed to the Facilities Application Audit section for consideration and direction on how to proceed.

3.10 Application Disposition

The disposition of an application may occur through the application licensing process, as a result of a Board hearing, or because of the applicant's decision not to proceed with the energy development. Application disposition includes

- issuance of a licence by the ERCB,
- denial of a licence by the ERCB,
- closure of an application by the ERCB, and
- withdrawal of an application by the applicant.

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 1

Applicant General Information

DAY MONTH YEAR

APPLICANT'S REFERENCE ____________________

The applicant certifies that the information here and in all supporting documentation is correct and that the facility, pipeline, pipeline installation, or well will be drilled, constructed, operated, amended, and abandoned in accordance with all regulatory requirements or as directed by the Energy Resources Conservation Board.

1. APPLICANT INFORMATION

Applicant Name ____________________ Applicant BA Code ____________________

Company Contact ____________________

Telephone ____________________ Fax ____________________

E-Mail Address ____________________

Consultant Name ____________________ Consultant BA Code ____________________

Consultant Contact ____________________

Telephone ____________________ Fax ____________________

E-Mail Address ____________________

2. APPLICATION TYPE (Check all boxes that describe the application)

☐ Facility(s) ☐ Pipeline(s) ☐ Pipeline Installation(s) ☐ Well(s) ☐ Self-Disclosure (facilities, pipelines, pipeline installations only)

3. COMPLETENESS CHECK

Enter the number of schedules, diagrams, maps, and survey plans attached.

__ Schedule 2: Facility Licence Application
__ Schedule 2.1:Working Interest Participants – Facilities
__ Schedule 2.2:Gas Plants – Facilities
__ Schedule 2.3:H_2S Information – Facilities
__ Schedule 2.4:Compressors/Pumps – Facilities
__ Process Flow Diagrams and Plot Plans (facilities and pipeline installations)
__ Schedule 3: Pipeline Licence Applications
__ Schedule 3.1:Pipeline Segment/ Pipeline Installation Identification
__ Pipeline right-of-way plan
__ Base Maps (pipelines/pipeline installations)
__ Schedule 4: Well Licence Application
__ Schedule 4.1: Working Interest Participants – Wells
__ Schedule 4.2: Multiwell Pad Location
__ Schedule 4.3: Well H_2S Information
__ Survey Plans (wells only)

4. ERCB USE ONLY

Date Received ____________________ Application Number __________ Reviewed by ____________________

Field Centre Code ____________________ ☐ Routine ☐ Nonroutine Entered By ____________________

Licence Number ____________________ Date ____________________

3.11 How to Complete Schedule 1: Applicant General Information

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional). You must enter the Alternate Reference, GDEHY, for facility applications with glycol dehydrators included in the design.

Step 1: Applicant Information

Applicant Name	Enter the full corporate name of the applicant associated with the business associate (BA) code.
Applicant BA Code	Enter the 4-digit BA code issued to your company.
Company Contact	Enter the name of the person authorized by your company to be responsible for the application. By authorizing the contact person to act on your company's behalf, the actions and decisions of this individual will be considered by the ERCB to be the actions and decisions of your company.
Telephone/Fax/ E-mail Address	Enter the telephone number, fax number, and e-mail address of the contact person, including area codes where applicable.
Consultant Name	Enter the company name of the consultant submitting the application on your company's behalf. Although authorized by the applicant and acting on its behalf, consultants must also provide the full name, business telephone number, fax number and, if possible, e-mail address of the applicant's/company's contact person.
Consultant BA Code	Enter the 4-digit BA code issued to the consultant company by the ERCB.
Consultant Contact	Enter the name of the person at the consulting company be responsible for the application.
Telephone/Fax E-mail Address	Enter the telephone number, fax number, and e-mail address of the contact person at the consulting company, including area codes where applicable.

Step 2: Application Type

Facility(s)/Pipeline(s)/ Pipeline Installation(s)/ Well(s)	Check all boxes that apply to the type of application you are submitting.
Self-Disclosure	Check this box if this is a self-disclosure application for facility, pipeline, or pipeline installation. If selected, you must attach a letter of explanation describing the background and nature of the licensing issue (see Section 3.9).

Step 3: Completeness Check

Enter the number of schedules, diagrams, maps, and survey plans attached to your application in the designated areas.

Section 4 Application Audit Process

4.1 Overview

The ERCB provides the energy industry with requirements and expectations to assist the applicant/licensee both in advance of submitting an application for energy development and throughout the life of a project. The purpose of the Facilities Applications' audit process is to ensure industry's regulatory compliance at the *Directive 056* licensing stage and to identify areas for continuous improvement.

The audit process (Figure 4.1) applies to both routine and nonroutine applications (Section 3.8.2). ERCB Facilities Applications conducts audits as part of a

- prelicensing review, based on application category type (e.g., Category E facilities and wells), if there are outstanding concerns/objections to determine if an environmental, safety, or compliance risk exists or if Facilities Applications believes an audit is otherwise appropriate, or
- postlicensing review, which requires the applicant to demonstrate how it met and planned for regulatory requirements as set out by the ERCB prior to filing the energy development licence application.

In either case, a defined set of documents is submitted to ERCB Facilities Applications for review in order to demonstrate that regulatory requirements as set out in *Directive 056* have been fulfilled.

The results of application audits are used to

- identify regulatory noncompliances,
- provide industry with feedback regarding compliant applications and/or areas for future improvement in application submissions,
- measure the effectiveness of the application process and provide benchmarks for future improvements,
- advise industry of updates to the application process between *Directive 056* revisions, and
- aid regulatory reform and the determination of requirements.

If applications are found to be noncompliant, ERCB Facilities Applications will initiate appropriate enforcement action (see ERCB Web site at www.ercb.ca for further enforcement details). While enforcement action primarily occurs during postlicensing reviews, there are instances when enforcement action is warranted prior to the issuance of a licence (e.g., initiating lease construction without a well licence in place).

When conducting an audit, the ERCB relies upon the representations made by the applicant/licensee and documents submitted by the applicant/licensee. The ERCB does not verify legal or beneficial title. The issuance of a licence or conducting of an ERCB audit is not to be relied upon by the licensee or third parties as a legal determination or confirmation of entitlement. Audits are conducted for ERCB internal purposes only.

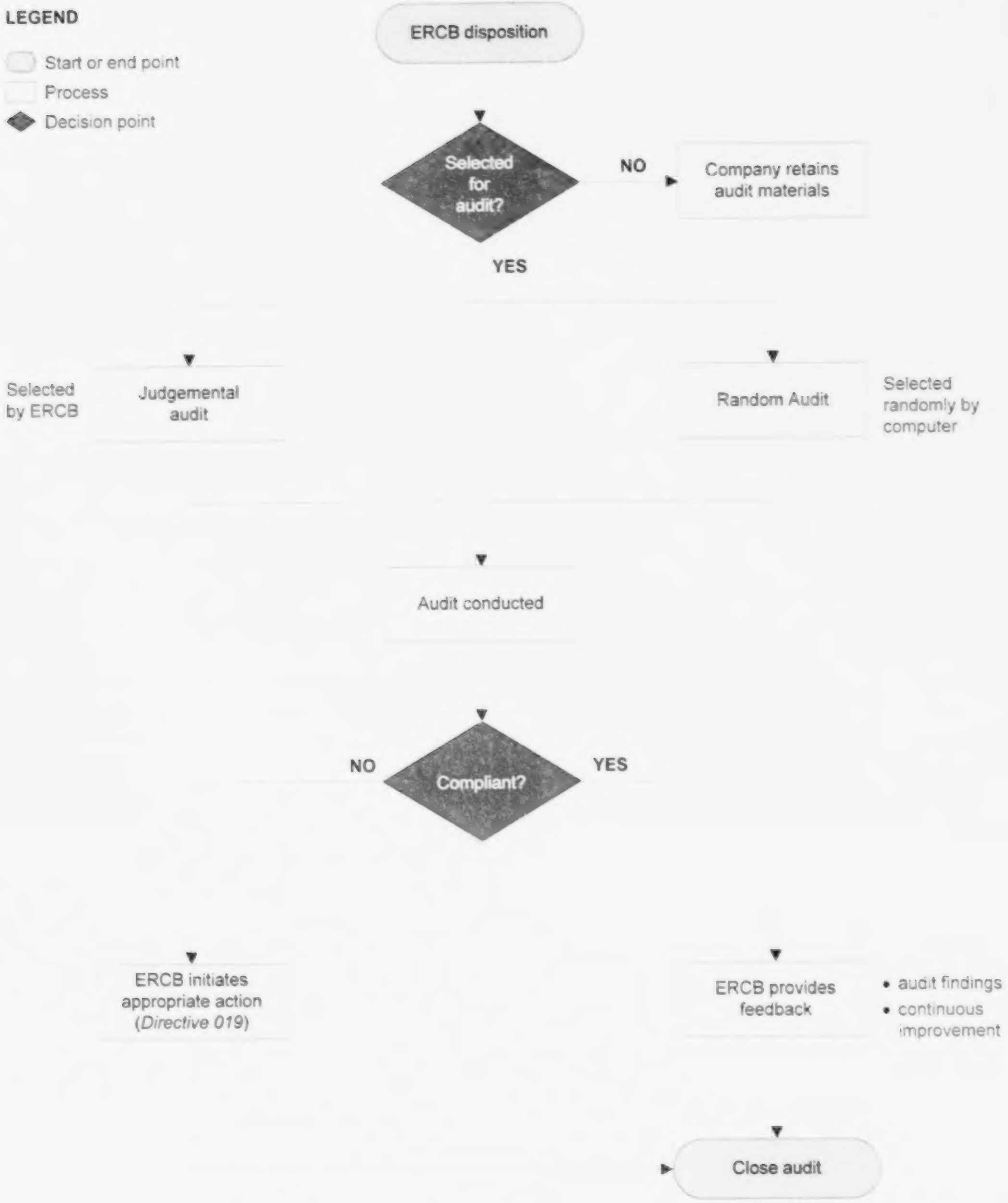
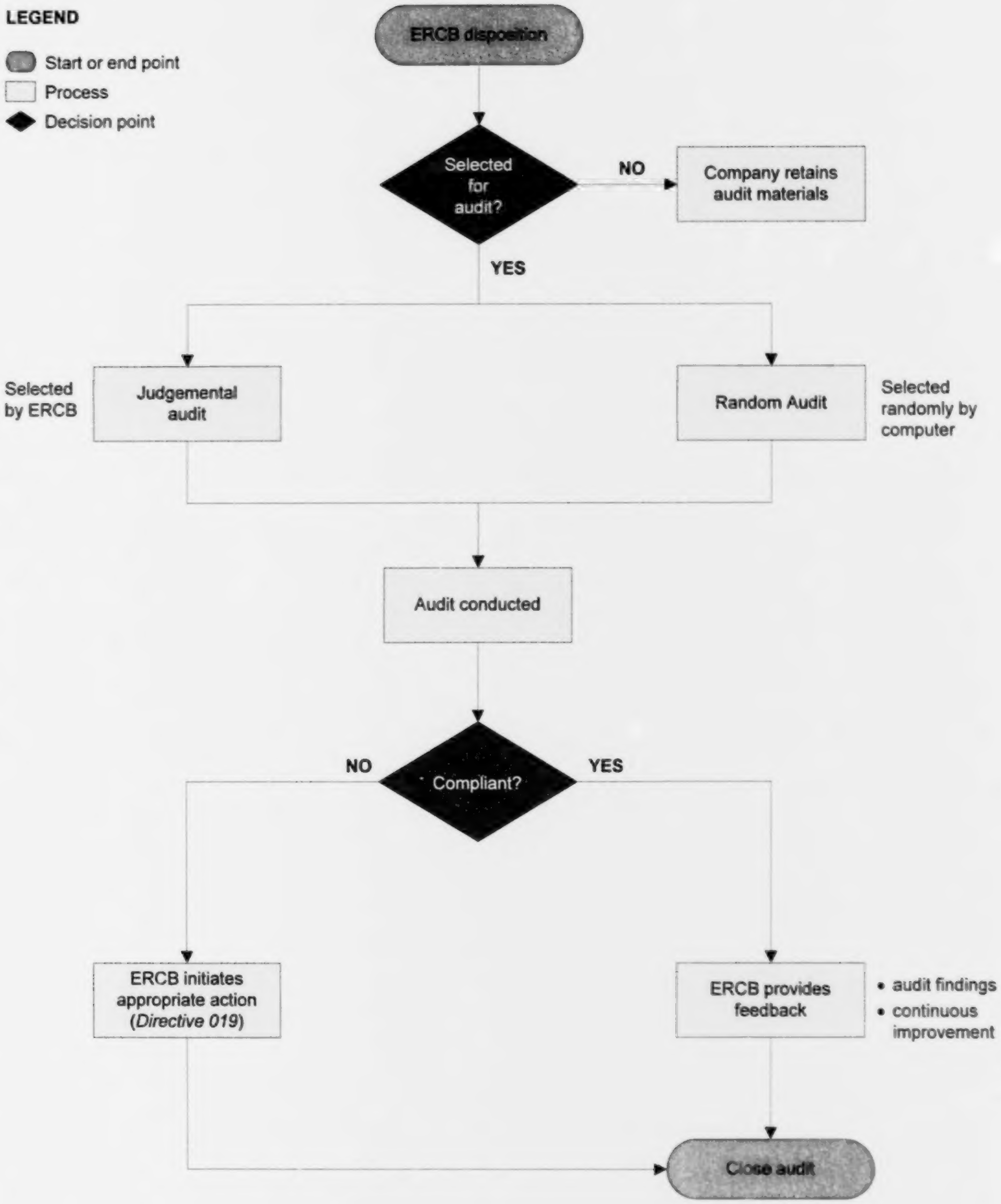

LEGEND
Start or end point
Process
Decision point
ERCB disposition
Selected for audit?
NO
Company retains audit materials
YES
Selected by ERCB
Judgemental audit
Random Audit
Selected randomly by computer
Audit conducted
NO
Compliant?
YES
ERCB initiates appropriate action (Directive 019)
ERCB provides feedback
• audit findings
• continuous improvement
Close audit

Figure 4.1. Facilities Applications audit process

4.2 Audit Selection

All routine and nonroutine applications are potential audit candidates. An application may be randomly selected by computer or judgementally selected by ERCB Facilities Applications based on factors such as category type, public risk, location, and recent applicant compliance history.



LEGEND
Start or end point
Process
Decision point
ERCB disposition
Selected for audit?
NO
Company retains audit materials
YES
Selected by ERCB
Judgemental audit
Random Audit
Selected randomly by computer
Audit conducted
NO
Compliant?
YES
ERCB initiates appropriate action (Directive 019)
ERCB provides feedback
• audit findings
• continuous improvement
Close audit

Figure 4.1. Facilities Applications audit process

4.2 Audit Selection

All routine and nonroutine applications are potential audit candidates. An application may be randomly selected by computer or judgementally selected by ERCB Facilities Applications based on factors such as category type, public risk, location, and recent applicant compliance history.

4.2.1 Full or Partial Audit Review

ERCB Facilities Applications may select an application for a postlicensing audit review and may undertake a full or partial audit of the supporting material.

Numbered statements represent requirements and expectations (see Section 1.4).

1) When subject to a full audit, the licensee must submit all supporting documentation associated with the application. The licensee must provide additional information to support the audit upon ERCB request.
2) When subject to a partial audit, the licensee must submit audit materials as requested by Facilities Applications to demonstrate compliance with the portion of the application under review.

4.2.2 Immediate Audit

Facilities Applications normally allows 14 calendar days for a licensee to submit the requested audit documentation. However, in certain instances Facilities Applications may proceed to an immediate audit and request the materials in support of the audit (e.g., if participant involvement, mineral rights, or wellbore rights are in question).

3) If an immediate audit is conducted, the applicant/licensee must submit the requested audit material within the time set by Facilities Applications. This is usually within the same day, but Facilities Applications may require the information within hours.

4.2.3 Prelicensing Audit Reviews

In a prelicensing audit review, Facilities Applications reviews all or part of the audit materials before a disposition of the application occurs.

4) The applicant must submit audit materials for prelicensing review if the
    a) application is for a new Category C and D gas plant or any Category E energy development,
    b) application is being considered by the ERCB Board,
    c) potential for an environmental, safety, or compliance risk exists, or
    d) ERCB believes it is otherwise appropriate.

4.2.4 Link to ERCB Field Surveillance Inspections

Based on the findings of an application audit review, Facilities Applications staff may refer an application to the Field Surveillance Branch for a field inspection to confirm that the materials, operations, and commitments match those indicated in the application.

4.3 Audit Documentation

An applicant must retain copies of all applications and supporting data in the event of an audit. Refer to Sections 5.10, 5.11, 5.12, 5.13, 6.10, 7.11, and 7.12 for a list of the required audit documentation for facility, pipeline, and well applications respectively.

5) The applicant must retain on file all records and audit documentation relating to an application for one year from the date of issue of the corresponding licence.

   The ERCB recommends that all records and audit documentation be kept on file for the life of the project, since exceptional circumstances may require that a review be conducted later in the life of the project.

6) The documentation must demonstrate that the supporting materials were developed and compiled during the project planning stage prior to filing the licence application.

7) The applicant must submit the required documentation to Facilities Applications within 14 calendar days of a request or as directed by Facilities Applications.

4.4 Compliance and Enforcement

Regulatory requirements are those rules that industry has an obligation to meet and against which the ERCB may take enforcement action in cases of noncompliance. For the purpose of *Directive 056*, noncompliances events are listed in Table 4.1. Refer to the ERCB Web site at http://www.ercb.ca under Industry Zone / Compliance and Enforcement for details regarding ERCB compliance and enforcement and see *Directive 019: ERCB Compliance Assurance—Enforcement.*

4.4.1 Voluntary Self-Disclosure

At any time during the life of a project, an applicant/licensee that identifies a noncompliance with ERCB requirements may voluntarily disclose the noncompliance to Facilities Applications; also see *Directive 019* for details regarding voluntary self-disclosure.

If a licensee meets the criteria for voluntary self-disclosure, there will be no enforcement action. Facilities Applications may require the licensee to complete a self-audit of previous *Directive 056* applications. The licensee may be required to conduct a review of its internal application/audit processes to ensure that the unsatisfactory event is not a recurring issue or the result of a systemic licensing process failure.

Directive 019 came into effect on January 1, 2006. Consequently, the noncompliance events noted in Table 4.1 have been risk assessed and now are located on the ERCB Web site at http://www.ercb.ca/docs/enforcement/riskassessednoncompliances.pdf. The ERCB will periodically review its risked noncompliances and make revisions to ensure fairness and consistency throughout the compliance categories. Additional information regarding ERCB Compliance and Enforcement can be found at http://www.ercb.ca under Industry Zone : Compliance and Enforcement.

Table 4.1. Consequences for unsatisfactory events

Risked Consequence*	Noncompliance events
PARTICIPANT INVOLVEMENT	
High	Failure to disclose to the ERCB any outstanding public/industry concerns/objections, whether they are received prior to or after filing of the application or whether the party is inside or outside the contact radius of personal consultation and notification.
High	No attempt at public and/or industry personal consultation and notification prior to filing the application.
High	Incomplete public and/or industry personal consultation and notification prior to filing the application.
Low	Failure to provide the required ERCB information packages prior to filing the application.
High	Failure to provide the required project-specific information package prior to filing the application.
Low	Failure to provide all required minimum information details in the project-specific information package prior to filing the application.
Low	Failure to obtain consent from the surface improvement owner prior to filing the application.
Low	Failure to meet the coal notification requirements prior to filing the application.
High	Failure to meet the airport notification requirements prior to filing the application.
High	Filing the application before expiry of the 14-calendar-day notification period.
Low	Failure to submit the requested audit documentation.
FACILITIES—TECHNICAL	
High	Failure to acquire the necessary facility licence prior to commencing site preparation, construction, and/or operation.
Low	Filing an application when the applicant is not a working interest participant.
Low	Failure to file a licence amendment application when required.
High	Failure to file a licence amendment application when required that results in a higher category/type.
Low	Failure to apply for the correct category/type of facility.
High	Failure to meet the spacing requirements in the facility design.
High	Failure to obtain approval from Alberta Community Development for sites with Historic Resource Value of 1, 2, or 3 prior to filing the application.
Low	Failure to notify Alberta Community Development for sites with a Historic Resource Value of 4 and 5 prior to filing application (New).
High	Not completing an acceptable noise impact assessment prior to application.
High	Not meeting the permissible sound levels at the nearest or most impacted residence.
High	Not including a vapour recovery unit in the facility design when required.
High	Designing/constructing a facility with storage systems that have no secondary containment as required by *Directive 055*.
Low	Designing/constructing a facility with storage systems that do not meet the applicable Low Risk requirements of *Directive 055*.
High	Failure to submit a facility licence application as "facilities-technical nonroutine" when required.
Low	Failure to meet process flow diagram requirements.
Low	Failure to submit the requested audit documentation.
PIPELINES/PIPELINE INSTALLATIONS—TECHNICAL	
High	Failure to acquire the necessary pipeline/pipeline installation licence prior to commencing right-of-way or site preparation, construction, and operation.
Low	Failure to apply for the correct category/type of pipeline/pipeline installation.
High	Failure to file a licence amendment application to reflect a change in the pipeline parameters that results in a higher category/type or higher level designation.
Low	Failure to file a licence amendment application to reflect a change in the pipeline parameters that does not result in a higher category/type or higher level designation.
High	Failure to design for the correct stress level.
Low	Connecting pipelines with different MOPs and not having the appropriate pressure control devices in place.
High	Failure to design for sour service where required.
High	Valves, flanges, fittings not suitable for the applied for MOP as defined by the Canadian Standards Association (CSA).

(continued)

Table 4.1. Consequences for noncompliance events (continued)

Risk Consequence	Noncompliance events
High	The substance of the connecting pipeline is not compatible with the proposed substance.
High	Designing the pipeline to transport a corrosive substance without including proper internal corrosion measures.
Low	Failure to obtain consent from Alberta Infrastructure prior to filing the application.
Low	Failure to meet Alberta Environment requirements prior to filing the application.
High	Failure to provide a correct pipeline H_2S release volume calculation that results in a higher level designation.
Low	Failure to provide a correct pipeline H_2S release volume calculation that results in no change to the level designation.
High	Failure to submit a pipeline/pipeline installation licence application as "pipelines/pipeline installations-technical nonroutine" when required.
High	Not completing an acceptable noise impact assessment prior to application.
High	Not meeting the permissible sound levels at the nearest or most impacted residence.
Low	Failure to meet the spacing requirements in the facility design.
High	Designing/constructing a facility with storage systems that have no secondary containment as required by *Directive 055*.
Low	Designing/constructing a facility with storage systems that do not meet the applicable Low Risk requirements of *Directive 055*.
Low	Failure to meet process flow diagram requirements.
Low	Failure to submit the requested audit documentation.
WELLS—TECHNICAL	
High	Failure to acquire the necessary well licence prior to commencing site preparation, construction, and/or operation.
High	Failure to prepare an H_2S release rate assessment when information in the public domain demonstrates the potential to encounter H_2S in the proposed well.
Low	Filing an application when the applicant is not a working interest participant.
Low	Failure to apply for the correct category/type of well.
Low	Failure to submit a survey plan that meets all applicable requirements.
Low	Failure to design to meet the pressure testing requirements for well re-entry licence application.
High	Failure to design the surface casing to meet all applicable requirements.
High	Failure to provide adequate groundwater protection.
Low	Failure to identify the correct head lessor (Freehold/Crown/both).
High	Failure to acquire a mineral lease continuation (no agreement with DOE).
Low	Failure to identify the correct terminating formation.
High	Failure to have permission from the mineral rights holder or lessee to exceed the 15 m maximum overhole depth prior to filing the application.
High	Failure to acquire the rights to the intended formation(s).
High	Incomplete DSU for the intended formation(s).
High	No rights to substance(s) for the intended formation(s).
High	Failure to acquire the abandoned wellbore rights.
High	Failure to meet or address the water body setback requirement prior to filing the application.
High	Failure to meet the surface improvement requirements prior to filing the application.
High	Failure to meet ERCB *Directive 056* environmental requirements prior to filing the application.
High	Failure to obtain approval from Alberta Community Development for sites with Historic Resource Value of 1, 2, or 3 prior to filing the application.
Low	Failure to notify Alberta Community Development for sites with a Historic Resource Value of 4 and 5 prior to filing the application (New).
Low	Failure to provide a geological prognosis and discussion regarding the potential to encounter H_2S in all prospective formations.
Low	Failure to provide geological mapping for the primary and secondary formations, as indicated in Schedule 4: Well Purpose.

(continued)

Table 4.1. Consequences for noncompliance events (concluded)	
Risk Consequence	**Noncompliance events**
Low	Failure to provide an engineering discussion of the H_2S prospective formations.
Low	Failure to include the 15 m overhole zone evaluation in the H_2S release rate assessment.
Low	Failure to meet the map or schematic cross-section requirements for the H_2S release rate assessment prior to filing the application.
Low	Failure to provide all basic elements, including the AOF test type, in the H_2S release rate assessment prior to filing the application.
Low	Failure to tabulate the results of the AOF and H_2S information in the manner required prior to filing the application.
High	Failure to submit a well licence application as "wells-technical nonroutine" when required.
Low	Failure to file a licence amendment application when required.
Low	Failure to submit the requested audit documentation.

4.4.2 Acquisitions

In cases of corporate property acquisitions or mergers, it is in the company's best interest to obtain all relevant application documentation when it acquires ownership of a facility, pipeline, or well.

8) A new owner is expected to assess all newly acquired properties to ensure that the property is operating with the correct *Directive 056* licence.
9) If a *Directive 056* noncompliance is identified, the new owner should notify Facilities Applications of the noncompliance and bring the matter into compliance.

4.4.3 Audit/Inspection Categories

The application requirements of *Directive 056* have been sorted into the following four audit/inspection categories, as reflected in Table 4.1:

- Participant Involvement
- Facilities—Technical
- Pipelines/Pipeline Installations—Technical
- Wells—Technical

4.4.4 Compliance Records

Audit results from *Directive 056* application audits are managed by Facilities Applications. A company wishing information on its compliance record pertaining to *Directive 056* applications must contact Facilities Applications. The request must be submitted in writing on company stationary.

4.4.5 Enforcement Review Process

Licensees may request a review of the enforcement and that further consideration of the enforcement action occur if it has new information that was not initially provided or there were unusual circumstances contributing to the noncompliance event. See *Directive 019* for further details.

5. Facility Licence
Applications

Section 5 Facility Licence Applications (Schedule 2)

5.1 Overview

An applicant must use Schedule 2 to apply for a facility licence to construct and operate any upstream oil or gas production, injection/disposal, or processing facility or to submit a licence amendment application.

Depending on the project, ERCB Facilities Applications requires the submission of one Schedule 1, along with one or more of the following forms:

- Schedule 2: Facility Licence Application
- Schedule 2.1: Working Interest Participants—Facilities
- Schedule 2.2: Gas Plants—Facilities
- Schedule 2.3: H_2S Information—Facilities
- Schedule 2.4: Compressors/Pumps—Facilities

5.2 Project Submissions

A project is defined as a network of facilities, pipelines, and/or wells that connect to a common facility. A project submission may consist of the consecutive submissions of related single licence applications or the single submission of multiple licence applications for related facilities, pipelines, and wells. The ERCB encourages applicants to identify related applications that are part of the same project through the use of a common reference number in the Applicant's Reference section.

Numbered statements represent requirements and expectations (see Section 1.4).

1) If the applicant is filing a project submission:
    a) a project must be submitted under one company name using one Schedule 1;
    b) the applicant must complete a separate Schedule 2 for each facility in the project; and
    c) each Schedule 2.1, 2.2, 2.3, and 2.4 must be related to only one Schedule 2.

5.3 Licence Expiry

New facility licences expire one year from the date of issue if the licence has not been acted on (i.e., construction has not started). After one year, the ERCB will cancel the expired licence from the active records. Amended facility licences are not issued with an expiry date unless the application is submitted for a temporary facility. It is the licensee's responsibility to ensure that the facility licence is still valid and has not expired prior to initiating any activity associated with the licence. Companies are asked to provide a courtesy notification to the applicable ERCB Field Centre using the ERCB electronic notification process (FIS) advising that construction has commenced on the licensed facility.

2) If an applicant intends to proceed with a project for which a licence has expired, it must cancel that previous licence and also fulfill all applicable regulatory requirements, including all participant involvement requirements (Section 2), before filing a new application.

3) If an applicant does not intend to proceed with the licence, it must notify Facilities Applications in writing and request that the licence be cancelled.

Due to the complexity of some developments, it is possible that the applicant may not be able to act on a permanent facility licence or complete operations at a temporary facility before the expiry date. Applicants can file a licence amendment application to extend the expiry date of a facility licence or a temporary facility licence for up to 6 additional months.

4) Prior to initiating new construction when a licence is nearing licence expiry, the applicant must conduct a new resident/landowner search and determine if any new issues may have arisen since the licence was granted.

5) Applicants must conduct full participant involvement work in order to apply to extend the expiry date of a facility licence or a temporary facility licence.

A facility licence that has been acted on cannot be cancelled and needs to be abandoned (see Section 5.9.2). Licensees that do not intend to act on a facility licence may request that the licence be cancelled by contacting the Facilities Applications Audit Team Leader.

5.4 Category Type and Consultation and Notification Requirements

Table 5.1 lists the types of facilities that require a licence under *Directive 056*, along with respective consultation and notification requirements. The category type of facility is dependent on the H_2S and sulphur content of the inlet gas stream.

Facilities associated with an in situ crude bitumen scheme approval require licensing under *Directive 056*. However, this facility application should not be submitted until the scheme approval has been received from the ERCB Resource Applications Group (see *Directive 023: Guidelines Respecting an Application for a Commercial Crude Bitumen Recovery and Upgrading Project*).

It is important that licensees/operators be aware of the operational and equipment scenarios requiring a facility licence and when a modification to an existing facility warrants a licence amendment application.

6) The applicant must identify the correct category type for the proposed facility project and perform all associated consultations and notifications.

7) The applicant must file an application for a multiwell battery or satellite when the surface equipment on site meets the requirements for licensing and when

   a) a single well has segregated production from more than one zone (i.e., not commingled in the wellbore) producing to the battery or satellite;

   b) a new inlet, which includes, as a minimum, measurement for the production from a second well, is added to an existing single-well battery or satellite; or

   c) multiple single-well batteries or satellites are operating within one surface lease.

If the applicant has both oil and gas production from separate wells or segregated zones within the same well at the same surface location, the surface facility should be licensed for the most significant operation at the site.

8) If the processing of solution gas or nonassociated gas is implemented at an existing licensed oil battery, the gas processing equipment must be licensed as a separate facility.

Table 5.1 Facility category type and consultation and notification requirements

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
B	Facilities < 0.01 mol/kmol H_2S in inlet stream	001	Exempt single-well facility (deemed nonroutine with concerns/objections)	• Landowner and occupants • Residents within 0.3 km	• Local authority • Crown disposition holders
B	Facilities < 0.01 mol/kmol H_2S in inlet stream	010	Gas processing plant	• Landowner and occupants • Residents within 0.5 km	• Crown disposition holders • Local authority • Landowners, occupants and urban authorities within 1.5 km
		011	Gas fractionation plant		
		020	Gas battery—multiwell		
		030	Oil battery—multiwell		
		031	Bitumen battery—multiwell		
		040	Compressor station		
		070	Oil satellite—multiwell	• Landowner and occupants	• Crown disposition holders
		071	Bitumen satellite—multiwell		
		080	Custom treating facility	• Landowner and occupants • Residents within 0.5 km	• Crown disposition holders • Local authority • Landowners, occupants and urban authorities within 1.5 km
		090	Injection/disposal facility—water		
		091	Injection/disposal facility—EOR		
		200	Straddle plant		
C	Facilities < 1 t/d sulphur inlet	300	Gas processing plant (deemed nonroutine application for new gas plants only)	• Landowner and occupants • Residents within 1.5 km	• Crown disposition holders • Local authorities • Landowners, occupants and urban authorities within 2.0 km
		301	Gas fractionation plant		
		302	Straddle plant		
		310	Gas battery—single well		
		311	Gas battery—multiwell		
		320	Oil battery—single well		
		321	Oil battery—multiwell		
		330	Bitumen battery—single well		
		331	Bitumen battery—multiwell		
		340	Compressor station		
		350	Oil satellite—single or multiwell	• Landowner and occupants	• Crown disposition holders
		351	Bitumen satellite—single or multiwell		
D	Facilities $\geq$ 1 t/d sulphur inlet	400	Gas processing plant (deemed nonroutine application for new gas plants only)	• Landowner and occupants • Residents within 1.5 km	• Crown disposition holders • Local authority • Landowners, occupants and urban authorities within 3.0 km
		401	Gas fractionation plant		
		410	Gas battery—single well		
		411	Gas battery—multiwell		
		420	Oil battery— single well		
		421	Oil battery—multiwell		
		430	Bitumen battery—single well		
		431	Bitumen battery—multiwell		
		440	Compressor station		
		450	Oil satellite—single or multiwell	• Landowner and occupants	• Crown disposition holders
		451	Bitumen satellite—single or multiwell		
E	Sulphur recovery facilities	600	Gas processing plant (deemed nonroutine)	• Landowner and occupants • Residents within 1.5 km	• Crown disposition holders • Local authority • Landowners, occupants and urban authorities within 5.0 km

5.5 Exemptions

9) Although no application is required under *Directive 056* for the following exempted activities and facilities (Sections 5.5.1 and 5.5.3), the company must provide a project-specific information package to landowners, occupants, and residents who may be directly and adversely affected by the activity.

10) If a concern/objection to the proposal is received, the company must advise the ERCB of the concern/objection. The ERCB may require that a nonroutine application be submitted. Should an application be required, it will be designated nonroutine by the ERCB and will undergo a full review before disposition of the application.

11) Even though applications may not be required for activities and facilities in Sections 5.5.1 and 5.5.3 under *Directive 056*, a company must meet all applicable regulatory requirements.

    If the company is unable to meet all the regulatory requirements, it must obtain a waiver from the requirement from the appropriate ERCB group.

5.5.1 Single-Well Facility Sites

An application is not required under *Directive 056* if the facility is a single-well site (oil, bitumen, or gas) where the H_2S content is less than 0.01 mol/kmol and

- total on-site wattage for compressors is less than 75 kilowatts (kW),
- there is no gas processing, and
- there is no injection/disposal component.

An application is not required under *Directive 056* if the facility is a single-well **gas** site where the H_2S content is greater than 0.01 mol/kmol and

- there are no liquid hydrocarbon/produced water storage tanks,
- there is no gas compression
- there is no gas processing, and
- there is no injection/disposal component.

Appendix 9 contains a stepped approach to licensing gas facilities to further clarify the licensing process for gas facilities.

5.5.2 Other Facilities

The licensing of the following facilities does not occur under *Directive 056*:

5.5.2.1 Installation of on-site power generating equipment

On-site power generation is managed and approved by the Alberta Utilities Commission (AUC). Although the facility licence should include emissions and noise impact from all sources on-site, power generation equipment is not licensed through *Directive 056*. For more information, contact the AUC.

5.5.2.2 Oil sands processing plants

Oil sands scheme approvals for in situ operations continue to be issued under *Directive 023* and through the ERCB Resources Applications Group. Licences for surface facilities associated with oil sands mine approvals are not issued under *Directive 056*.

Surface facilities associated with approved in situ schemes require a *Directive 056* facility licence. For these facilities, the participant involvement requirements conducted under *Directive 023* will satisfy the participant involvement requirements for the *Directive 056* application. Applications for in situ oil sands central processing units should be applied for using the category type multiwell bitumen batteries.

5.5.2.3 Class 1a and 1b oilfield waste management facilities

These will continue to be approved pursuant to *Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry* through ERCB Operations and are not licensed through *Directive 056*. If a facility currently licensed under *Directive 056* becomes a waste management facility, a *Directive 058* approval is required and the previously issued *Directive 056* licence will be cancelled. Operators are reminded that the receipt of oilfield waste from outside of a facility's production system for consolidation and transfer or for on-site storage or management is not permitted unless the facility is approved as an oilfield waste management facility. For further information, contact ERCB Operations.

5.5.3 Exempt Activities

Applications are not required for the following activities under *Directive 056* provided that the activity does not change the category type of the facility:

- temporary compressors in continuous use for less than 21 consecutive days as an alternative to flaring for such operations as the conservation of initial well test gas or plant turnaround, provided that landowner consent has been obtained and regulatory requirements are met (see *Directives 060* and *064*);
- replacing measurement and separation equipment;
- installation of downhole (subsurface) equipment;
- adding well production to an existing licensed multiwell facility;
- replacing a compressor or injection/disposal pump with the same type and size or a smaller one, such that total emissions do not increase;
- adding separators, dehydrators, pressurized bullets, process pumps, or group or test vessels to an existing licensed facility;
- adding a line heater to an existing licensed facility;
- adding a vapour recovery unit to an existing licensed Category C, D, or E facility;
- adding one compressor less than 75 kW to an existing licensed facility, provided that the landowner has been notified and has no concerns and that the facility will meet the nitrogen oxides (NO_x) and the noise requirements at the nearest residence (this does not apply to acid gas injection compressors regardless of size);
- adding storage tanks to an existing licensed facility. If additional storage tanks are added, the licensee must ensure that all *Directive 055* requirements have been met, including secondary containment. If the requirements will not be met, the licensee must contact ERCB Operations for assistance.

5.6 Records Correction

Applications to correct licence records should follow the self-disclosure process (see Section 3.9) for licence amendments.

5.7 Licence Amendments

Only facilities that have an existing ERCB facility licence number can be amended. Licensees may use the licence amendment (LA) applications process based on the criteria in Table 5.2.

Table 5.2. Licence amendment (LA) types

Reference	Schedule 2 Licence Amendment Type
LA1	Change category and/or type of facility
LA 2	Install and/or remove compression at existing licensed facilities (except standalone injection/disposal facilities)
LA 3	Change the maximum licensed inlet rates (design rates) of existing licensed facilities
LA 4	Change the licensed H_2S content of raw inlet gas at any existing licensed Category C, D, or E facility
LA 5	Install and/or remove injection/disposal pumps at an existing licensed facility
LA 6	Change the types of products recovered and/or the rates of recovery at an existing licensed gas processing plant
LA 7	Add regenerative sweetening equipment to an existing licensed gas processing plant
LA 8	Add nonregenerative sweetening process to an existing licensed Category C, D, or E facility
LA 9	Change the maximum continuous sulphur emissions rate at an existing licensed Category C, D, or E facility
LA 10	Extend the expiry date of a temporary facility or permanent facility for up to an additional 6 months
LA 11	Change the status of a temporary facility to a permanent operation
LA 12	Add a new flare/incinerator stack (a new source of emissions) at an existing licensed facility
LA 13	Increase the sulphur recovery efficiency at an existing licensed sulphur recovery plant
LA 14	Decrease the sulphur recovery efficiency at an existing licensed sulphur recovery plant
LA 15	Change the method of acid gas disposal at an existing licensed Category C, D, or E gas processing plant
LA 16	Degrandfather an existing licensed sulphur recovery plant in accordance with the sulphur recovery requirements of *ID 2001-03*

Applicants may apply for multiple types of licence amendments on one Schedule 2; however, note that licence amendment types 10 and 11 cannot be done in combination with any other amendment type. Not all types of licence amendments are available for all category types (see Table 5.3).

12) When filing a licence amendment application, the applicant must retain the original facility type (e.g., gas battery, oil battery) unless
    a) additional equipment proposed for installation will cause the gas facility to become a gas processing plant (e.g., the addition of a refrigeration skid will change an existing compressor station to a gas processing plant); or
    b) equipment proposed for removal will cause the facility type to change (e.g., the removal of the refrigeration process will change an existing gas processing plant to a gas battery).
13) Applicants must file licence amendment applications when the proposed activity will result in an increase to emissions, risk, and/or public impact.
14) Participant involvement requirements for licence amendment applications are based on the category type of facility being amended (see Table 5.1).

New facility licence applications for C, D, and E gas processing plants and licence amendment applications for E category gas processing plants are designated nonroutine and require that all supporting audit documentation be submitted with the application schedules. Licence amendment applications for C and D gas processing plants may be submitted routine unless there is a nonroutine participant involvement or technical issue.

Table 5.2 provides a reference for the licence amendment types in Step 4 of Schedule 2.

Table 5.3. Energy development category type amendment combinations*

LICENCE AMENDMENT (LA) TYPE

CATEGORY TYPE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B010	x	x	x		x	x	x			x	x	x				
B011	x	x	x		x	x	x			x	x	x				
B020	x	x	x		x					x	x	x				
B030	x	x	x		x					x	x	x				
B031	x	x	x		x					x	x	x				
B040	x	x	x		x					x	x	x				
B070	x	x	x		x					x	x	x				
B071	x	x	x		x					x	x	x				
B080	x	x	x		x					x	x	x				
B090	x		x		x					x	x	x				
B091	x		x		x					x	x	x				
B200	x	x	x		x	x	x			x	x	x				
C300	x	x	x	x	x	x	x	x	x	x	x	x			x	
C301	x	x	x	x	x	x	x	x	x	x	x	x			x	
C302	x	x	x	x	x	x	x	x	x	x	x	x			x	
C310	x	x	x	x	x			x	x	x	x	x				
C311	x	x	x	x	x			x	x	x	x	x				
C320	x	x	x	x	x			x	x	x	x	x				
C321	x	x	x	x	x			x	x	x	x	x				
C330	x	x	x	x	x			x	x	x	x	x				
C331	x	x	x	x	x			x	x	x	x	x				
C340	x	x	x	x	x			x	x	x	x	x				
C350	x	x	x	x	x			x	x	x	x	x				
C351	x	x	x	x	x			x	x	x	x	x				
D400	x	x	x	x	x	x	x	x	x	x	x	x			x	
D401	x	x	x	x	x	x	x	x	x	x	x	x			x	
D410	x	x	x	x	x			x	x	x	x	x				
D411	x	x	x	x	x			x	x	x	x	x				
D420	x	x	x	x	x			x	x	x	x	x				
D421	x	x	x	x	x			x	x	x	x	x				
D430	x	x	x	x	x			x	x	x	x	x				
D431	x	x	x	x	x			x	x	x	x	x				
D440	x	x	x	x	x			x	x	x	x	x				
D450	x	x	x	x	x			x	x	x	x	x				
D451	x	x	x	x	x			x	x	x	x	x				
E600	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

* Only certain licence amendment types are acceptable based on the category type of the facility. Acceptable licence amendment types are indicated with an "x" in this table.

5.8 Participant Involvement Requirements

15) The applicant must ensure that the requirements set out in Section 2 are met for the radius set out in Table 5.1.

16) The applicant must meet the information requirements as part of personal consultation and notification for all facility licence applications (Section 2).

17) The applicant must provide information packages to those persons whose rights may be directly and adversely affected, as set out in Table 5.1, and be prepared to discuss the project as necessary.

a) If personal consultation is required, the applicant must

   i) provide the project-specific information package, which must meet the information requirements described in Section 2 and include any other information to assist in understanding the proposed development;

   ii) provide the letter from the Chairman of the ERCB;

   iii) provide the ERCB brochure *Understanding Oil and Gas Development in Alberta*;

   iv) provide the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*; and

   v) offer the EnerFAQs listed in Appendix 11. These are available on the *Directive 056* Web page.

b) If notification is required, the applicant must provide the applicant's project-specific information package and the letter from the Chairman of the ERCB and offer copies of

   i) the ERCB brochure *Understanding Oil and Gas Development in Alberta*;

   ii) the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*; and

   iii) the EnerFAQs listed in Appendix 11.

18) Applicants must meet the requirements in Section 8.3 when planning sour gas activity where residents are located within the EPZ.

19) For Category C, D, and E facilities listed in Table 5.4, the applicant must identify and contact all oil and gas reserve owners and licensees of existing similar facilities within the recommended radius.

   a) The applicant must provide all oil and gas reserve owners and licensees with a written overview of the proposed facility, including location, type, and design capacities and the anticipated timing for application submission. The onus is then on these parties to raise any concerns/objections to the proposal.

Table 5.4. Facility industry notification requirements

Proposed facility	Mineral reserve owners	Facility licensees
New gas processing plant (Categories C and D)	5.0 km	15.0 km
Gas processing plant (Category E)	5.0 km	15.0 km
Oil and bitumen production facilities (Category D)	N/A	2.0 km

20) For facilities not listed in Table 5.4, the ERCB does not prescribe a radius for industry notification. Applicants are expected to determine what is a reasonable geographic area for industry notification.

   a) The ERCB does not prescribe the area the applicant must investigate; however, the applicant is expected to consider investigation parameters similar to those in Table 5.4.

   b) The applicant is expected to discuss the proposal with licensees of facilities that may potentially be directly and adversely affected.

21) When the applicant notifies other licensees, it must continue to include these licensees in updates during the licensing process (i.e., close the participant involvement loop; see Section 2.3).

22) The applicant must indicate any outstanding concerns/objections by checking the appropriate bold response on Schedule 2 to indicate a nonroutine application.

    a) The applicant must also include a written summary of the outstanding issues for ERCB review and consideration (Section 3.8.2), including a discussion as to how the applicant intends to mitigate the issues raised.

    b) The applicant and the objector are expected to consider using the ERCB's Appropriate Dispute Resolution (ADR) program to mitigate outstanding concerns/objections (Section 2).

5.9 Technical Requirements

The following subsections under facility technical requirements discuss various fields on Schedules 2, 2.1, 2.2, 2.3, and 2.4.

5.9.1 Emergency Response Planning

The emergency planning zone (EPZ) for a Category C, D, or E facility is based on the highest H_2S release volume from any pipeline entering or leaving the facility. An emergency response plan (ERP) is required when a surface development (e.g., occupied dwelling, campground) is located within the calculated EPZ. ERPs should be forwarded directly to the ERCB Emergency Planning and Assessment Section for review. See *Directive 071* for further details on emergency response planning.

23) All licensees must have a corporate level ERP that addresses the fundamentals of how an emergency situation would be handled.

24) The applicant must ensure that its ERP has been approved by the ERCB Emergency Planning and Assessment Section prior to commencement of operations.

5.9.2 Licensee Liability Rating

The Licensee Liability Rating (LLR) program assesses a licensee's ability to address its abandonment and reclamation liabilities based on a comparison of its deemed asset to its deemed liability. The licensee's deemed asset is considered to be its cash flow derived from wells for which it is the licensee. Its deemed liability is considered to be the cost to abandon and reclaim wells and facilities for which it is the licensee.

The liability assigned to active facilities is less than that of an inactive facility. A facility is considered active if it has reported production or injection within a specified period (see *Directive 006: Licensee Liability Rating (LLR) Program and Licence Transfer Process*).

Because some facilities do not report production to the ERCB, a facility's active/inactive status cannot be determined. To allow an active nonreporting facility to benefit from the reduced liability associated with an active status, the licensee can link its facility to the reporting facility that receives its production and use its active/inactive status. Licensees of compressor stations that produce directly to a sales gas pipeline should contact the ERCB Corporate Compliance Group for information on how this affects their LLRs.

Licensees of abandoned facilities can change the facility status to "abandoned" through the ERCB's Digital Data Submission (DDS) system. This change is not made through *Directive 056*.

25) The applicant of a nonreporting facility (e.g., compressor station, satellite) must record the facility licence number of the reporting facility when filing a facility licence application or, for Category B and C compressors, indicate on the application schedule that the production goes direct to sales. If a linking number is not recorded for a nonreporting facility, the facility status will be considered inactive for liability management purposes. For a gas system, the reporting facility must be a gas facility, and for an oil facility, the reporting facility must be an oil facility.

26) The applicant of new and/or amended sulphur recovery plants, straddle plants, or bitumen central processing facilities with a bitumen inlet rate greater than 5000 m^3/d must have the liability assessment completed in accordance with the Large Facility Liability Management Program (see *Directive 024*) prior to submitting an application under *Directive 056*.

5.9.3 Proliferation

As the proponent of a new oil or gas facility or pipeline, the applicant has already determined that the proposed project will meet its business needs. The ERCB, as the approving authority, is required to evaluate the need for the proposed project in the broader public interest. The ERCB considers this interest in terms of economic, orderly, and efficient development of Alberta's oil and gas resources.

The ERCB continues to receive strong input from the public, which is aware of the growth of resource development. The ERCB accepts the public's view that there is a need to avoid facility proliferation when possible and practical.

The ERCB sour gas proliferation requirements are set out in *ID 2001-03: Sulphur Recovery Guidelines for the Province of Alberta* and are summarized below.

27) Prior to filing an application for a new Category C, D, or E gas processing plant, the applicant must

    a) evaluate all existing sour gas plants and pipelines that offer viable alternatives within a 15 km radius of the proposed new sour gas plant, regardless of ownership or interest:

        i) the applicant must evaluate the feasibility of upgrading an existing facility and of forging commercial partnerships with existing licensees;

        ii) the applicant must obtain an accurate assessment of the capabilities of existing sour gas plants, including design parameters (e.g., operating pressures and limitations on H_2S content) and capacity available; and

        iii) the applicant must demonstrate that feasibility of modifying the facilities was evaluated with the licensee if existing plants are not designed to handle the applicant's gas or if there are capacity limitations;

- high processing fees, in and of themselves, may not be considered sufficient grounds for rejecting the option to use an existing facility;

b) assess the area's future production potential to ensure that the proposed facility is designed to meet the regional long-term processing needs;

c) contact other sour gas reserve owners within 5 km of a proposed new sour gas plant with a view to inviting these well licensees to participate in the new facility in some manner; and

d) include information on its assessment as part of the application audit package submitted to Facilities Applications with the application schedules.

28) The applicant of a new Category C, D, or E gas processing plant must formally contact licensees of existing facilities for required information and be able to document related responses.

a) The ERCB expects the parties to share information in a timely manner. If the applicant is unable to obtain the information necessary to conduct an assessment, it should contact Facilities Applications.

29) To preclude the unnecessary development of new Category C and D facilities, the applicant is expected to investigate the feasibility of using existing facilities and/or pipelines before submitting an application to the ERCB.

5.9.4 Facility Design Criteria

30) The inlet and recovered product rates must represent the total design rates associated with all on-site equipment at the surface location based on a daily maximum.

31) For facility licence amendments, the inlet and recovered product rates for the facility must represent the total on-site design rate, not only the design rates of the additional equipment.

For facilities with a sulphur inlet greater than 1 tonne per day (t/d), the raw gas inlet rate and sulphur inlet rate represent the maximum operating limits for the facility. These rates are monitored by the ERCB Operations Group.

Heavy oil/oil sands batteries and satellites are also subject to the regulatory requirements detailed in *ID 91-03: Heavy Oil/Oil Sands Operations* and *IRP Volume 3: Heavy Oil and Oil Sands Operations.*

32) The applicant must ensure that an oil analysis is available to demonstrate that the gravity of the inlet stream matches the category applied for and that the facility will meet the requirements of these documents for heavy oil facilities.

5.9.5 Sulphur Recovery

Both the ERCB and Alberta Environment (AENV) have regulatory responsibilities for sulphur recovery. The applicant must be aware of the regulatory requirements of both agencies. (See the *Environmental Protection and Enhancement Act: Approvals and Registrations Procedure Regulation, Applications for Sour Gas Processing Plants and Heavy Oil Processing Plants: A Guide to Content, September 1999.*)

ERCB *ID 2001-03: Sulphur Recovery Guidelines for the Province of Alberta* sets out the basis for sulphur recovery and emissions reduction from

- Category D and E gas processing plants, and
- other types of upstream petroleum industry operations licensed under *Directive 056* where continuous flaring or incineration of gas containing H_2S occurs (e.g., production batteries, dehydration facilities, and compressor stations where the bulk gas stream is not sweetened).

33) The applicant must meet the requirements of *ID 2001-03*.

    a) If the applicant believes a variance to the minimum recovery levels of *ID 2001-03* is warranted, the applicant must file a nonroutine application.

34) When designing new Category D and E gas processing plants, the applicant must

    a) comply with the calendar quarter-year sulphur recovery of *ID 2001-03*, and

    b) determine the sulphur recovery based on mass (tonnes sulphur equivalent) using the following formula:

$$\text{Sulphur recovery} = \frac{\text{Sulphur production}}{(\text{Sulphur production} + \text{Sulphur emissions})}$$

where

- sulphur production = tonnes of sulphur product and/or tonnes sulphur equivalent contained in injected sour gas or acid gas streams; and
- sulphur emissions = tonnes sulphur equivalent contained in flared sour and acid gas streams and in the sulphur recovery unit tail gas or incinerator stack emissions.

35) For other upstream petroleum industry facilities where sulphur recovery requirements apply, the applicant must

    a) comply with the calendar quarter-year sulphur recovery of *ID 2001-03*, and

    b) determine the sulphur recovery requirements based on the sulphur content of flared or incinerated gas streams (not on the sulphur inlet of the facility), in addition to the sulphur recovery unit tail gas incinerator stack emissions.

36) If an applicant is filing a licence amendment application to modify a grandfathered gas plant, the applicant must meet the special provisions set out in *ID 2001-03*.

37) For facilities where subsurface injection is the method of acid gas disposal, a separate ERCB approval is required for the injection scheme, in accordance with the requirements of *Directive 065: Resources Applications for Conventional Oil and Gas Reservoirs*. Additional information may be obtained from ERCB Resource Applications.

5.9.6 Process Flow Diagrams

38) The applicant must attach a process flow diagram (PFD) for each facility application.

    a) The PFD must identify all existing and proposed equipment at the facility.

i) For licence amendments, the applicant must identify the new equipment proposed for installation on a full-site PFD; a partial PFD is not acceptable.

   - New equipment must be identified in the legend and annotated on the diagram.
   - Equipment designated for removal by the application must also be clearly identified.

b) The applicant must clearly identify the following on the PFD:

   i) process equipment

   ii) measurement points

   iii) storage vessels and tanks (including pop tanks)

   iv) source(s) of all inlet/receipts and/or deliveries, including all fuel lines, flare lines, and vent points

   v) safety equipment (i.e., location of emergency shutdown device [ESD] block valves and depressure points)

Typical diagrams are acceptable, providing that they accurately represent the actual operations of the facility and contain the correct location and applicant name. Piping and instrumentation diagrams (PIDs) should be submitted if available at the time of application.

5.9.7 Total Continuous Emissions

39) The applicant must include the volume of gas from all sources on site that is disposed of by burning in a flare or incinerator. This does not include fuel gas used for header purge, pilot fuel, make-up gas to achieve effective combustion, sulphur recovery unit tail gas, or volumes attributed to emergency conditions or maintenance operations.

   a) Applicants proposing to flare and/or incinerate gas must comply with the requirements of *Directive 060.*

40) The applicant must include the volume of gas vented from all sources on site, including any volumes of CO_2 associated with a sweetening process.

   a) Applicants proposing to vent gas must comply with *Directive 060* and Section 8.080 of the *Oil and Gas Conservation Regulations* (*OGCR*).

41) The applicant must evaluate the conservation of continuous flared, incinerated, and vented volumes in accordance with *Directive 060.*

If NO_x emissions are present, it is the applicant's responsibility to ensure that the facility meets the *Alberta Ambient Air Quality Objectives* (*AAAQO*) for NO_2. It is possible that facilities exempt from registration with AENV could exceed the *AAAQO*. It is in the company's best interest to conduct modelling to ensure that its facility will meet the *AAAQO*. In order to demonstrate that the facility meets the *AAAQO*, the ERCB may require that the applicant provide NO_x modelling.

42) In designing its compression needs, the applicant must design the facility to meet the requirements set out by *IL 88-05: Application for Approval of Natural Gas*

Driven Compressors and AENV's *Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants.*

43) The applicant must register all compressor stations, pumping stations, and Category B gas processing facilities with AENV before commencing operation if the total NO_x emissions are greater than 16 kilograms per hour (kg/h).

44) New and additional natural gas-driven reciprocating engines greater than 600 kW at full load must not emit more than 6 grams of NO_x per kilowatt-hour (g/kWh).

45) The applicant must meet the following requirements when NO_x emissions are present at facilities that require registration or approval with AENV:

    a) Dispersion modelling must be conducted in accordance with AENV's *Air Quality Model Guideline* (http://environment.gov.ab.ca/info/library/6709.pdf).

    b) Based on dispersion modelling, predicted NO_2 concentrations must meet the *AAAQO*, using guidance from the *Air Quality Model Guideline.*

    c) Standby equipment used only for emergency purposes may be excluded from dispersion modelling.

    d) The engine exhaust stack height must be set in accordance with the direction given in *IL 88-05: Application for Approval of Natural Gas Driven Compressors* and AENV's *Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants.*

    e) NO_x emissions from steam generating units, heaters, and boilers may be excluded from dispersion modelling if their combined contribution is less than 3 per cent of the total NO_x emissions.

Directive 039: Revised Program to Reduce Benzene Emissions from Glycol Dehydrators sets out requirements for the reduction of benzene emissions from glycol dehydrators. In the directive, licensees are required to submit to the ERCB an annual Dehydrator Benzene Inventory List. In an effort to ensure that the list is kept current, the ERCB is seeking to have facility applications that include glycol dehydrators identified for tracking purposes. This will be done through the use of an Alternate Reference on Schedule 1 under the Applicant's Reference section for all new and amended facilities that include glycol dehydrators in the design. Applicants are expected to fill out this reference with the code of GDEHY for all facility applications that include glycol dehydrators.

5.9.8 Compressor and Pump Additions

Temporary compressors in use for less than 21 consecutive days to test new gas well production as an alternative to flaring do not require a licence under *Directive 056*, provided that

- there is no other compressor on site,
- the licensee/operator has obtained landowner and resident consent, and
- the compressor will meet all regulatory requirements, including noise and NO_x requirements.

46) If there are any outstanding concerns/objections, the applicant must file a nonroutine application.

47) The use of temporary compressors is limited to a one-time-per-site occurrence. For further information on temporary compressors, see *Directives 060* and *064*. Licensees/ operators must notify the ERCB Field Centre prior to operation.

48) Licensees are not required to submit a licence amendment application for the purpose of adding one compressor or pump less than 75 kW to an existing licensed facility. In these instances, the licensee must

   a) provide the landowner with a written description of the project,

   b) ensure that there are no outstanding concerns/objections, and

   c) ensure that the facility will meet the NO_x and noise requirements.

This exemption does not apply to acid gas injection compressors, regardless of size, and does not apply to the use of temporary compression greater that 75 kW for any period of time for the purpose of determining permanent compression requirements.

All compressors at a site are to be licensed as part of the facility unless the equipment is used to provide instrument air.

Applications are required for all compressor installations at new facilities regardless of the kW rating if the H_2S content of the inlet gas is greater than 0.01 mol/kmol (not including temporary compressors used for new gas well testing less than 21 consecutive days).

Applications are not required for the installation of process pumps that are not related to the injection/disposal of water or for EOR purposes (e.g., glycol or chemical injection pumps, oil or water transfer pumps, recycle pumps, injection booster pumps).

49) The applicant must apply for the installation of the pumps associated with the injection/disposal component of a facility, regardless of pump size.

   a) The applicant must amend the existing facility licence, retaining the original category type, to add an injection/disposal component to an existing licensed facility.

   b) Third-party injection/disposal facilities must be licensed as waste disposal facilities under *Directive 058*.

A Schedule 2 application is for the purpose of licensing upstream surface facilities. For licensing of compressors or pump stations on transmission pipelines (sales products), see Section 6.

Facility licences issued under *Directive 056* do not include the installation of generators whose purpose is to generate power as part of a solution gas conservation process. In such cases, *Directive 056* remains the licensing point for the battery portion of the operations, while the generators require licensing in accordance with *Directive 028*.

5.9.9 Setback Requirements

There are specific setback distances between Category C, D, and E facilities and permanent dwellings, unrestricted country developments, urban centres, or public facilities.

50) The applicant must meet the applicable setback requirements in Table 5.5 based on the calculated H_2S release volume for pipeline(s) associated with the proposed facility.

51) The applicant must consider the level designation of inlet/outlet pipelines and use the highest level designation to determine the facility setback requirement.

52) Release volumes from on-site equipment must not be totalled to determine the setback requirements of the facility.

53) The applicant must address the issue of the setback restrictions of Table 5.5 during its participant involvement process (see Section 2).

Table 5.5. Setback requirements for Category C, D, or E facilities with pipelines containing H_2S

Level	H_2S release volume (m^3)	Minimum distance
1	< 300	Lease boundary
2	≥ 300 to <2000	0.1 km to individual permanent dwellings and unrestricted country developments 0.5 km to urban centres or public facilities
3	≥ 2000 to <6000	0.1 km to individual permanent dwellings up to 8 dwellings per quarter section 0.5 km to unrestricted country developments. 1.5 km to urban centres or public facilities
4	≥ 6000	As specified by the ERCB but not less than Level 3

5.9.10 Plot Plans and Spacing Requirements

54) A plot plan must be submitted with each facility application that clearly indicates the on-lease location of all the equipment (with the exception of valves) indicated on the PFD and reflects all surface improvements, water bodies, and vegetation for a minimum of 100 m past the edge of the lease, to demonstrate that all off-lease spacing requirements have been met (e.g., distance to a residence, water bodies, forestation, or road allowance).

A diagram illustrating the spacing requirements is in Appendix 7. The following is an abbreviated list of the spacing requirements. A complete list is in Section 8 of the *OGCR*.

55) The applicant must meet the ERCB's spacing requirements. If it does not, a nonroutine application is required.

    a) Tanks containing fluids other than fresh water must be located so that the distance from the outer perimeter of the dike to any surface improvement (other than a public roadway) is not less than 60 m (*OGCR* 8.030[4]).

    b) Facility equipment must maintain a minimum distance of 100 m from a water body (*OGCR* 8.060).

    c) Flare pits and flare line ends must not be located closer than 100 m to a surface improvement, except a surveyed roadway, (*OGCR* 8.080[3]). Flares and incinerators must be located at least 40 m from a surveyed roadway or road allowance with open public access (*Directive 060*, Section 7.8).

d) A flare pit or the open end of a flare line must not be located or remain within 50 m of a well or oil storage tank (*OGCR* 8.080[5]).

e) A flare pit or open end of a flare line must not be located or remain within 25 m of any oil or gas processing equipment (*OGCR* 8.080[5]).

f) Oil storage tanks must be at least 50 m from a well (*OGCR* 8.090[3]).

g) Flame-type equipment must not be placed or operated within 25 m of a well, oil storage tank, or other source of ignitable vapour (*OGCR* 8.090[4]).

h) Flame-type equipment must not be placed or operated within 25 m of any process vessels unless, where such is applicable, the flame type equipment is fitted with an adequate flame arrester (*OGCR* 8.090[5]).

i) The exhaust pipe from an internal combustion engine, located less than 25 m from a well, process vessel, oil storage tank, or other source of ignitable vapour must be located at least 6 m from the vertical centre of the well and directed away from the well (*OGCR* 8.090[9]).

j) The flare, incinerator, and enclosed burner spacing must comply with the requirements defined in the current *Forest and Prairie Protection Regulations*.

k) Compressors (electrically or engine driven) that are permanent and housed in a building must be located 25 m or more from wells.

   - Compressors are considered permanent when placed on pilings or a defined foundation and connected to the facility with rigid piping.

l) Nonpermanent compressors (on wheels or skid mounted) must be spaced such that the air intakes and exhaust must be no closer than 6 m to a well.

   - Compressors are considered nonpermanent when they can be quickly disconnected and moved from where they are placed and there is no associated foundation constructed.

m) Nonpermanent electrically driven compressors must comply with the current edition of *Code for Electrical Installations at Oil and Gas Facilities*, Safety Codes Council (Alberta).

Location of tanks and flare systems relative to public roadways are not specified in the *OGCR*. When planning facilities within 100 m of a municipal road, applicants should discuss the placement of tanks with the local authority. Additionally, for facilities planned within 300 m of a major (numbered) highway or within 800 m of an intersection of two major highways, applicants should contact Alberta Infrastructure and Transportation for permit requirements.

5.9.11 Vapour Recovery and Odour Control

Trucks are viewed as part of the facility operation when loading, unloading, and transporting fluid containing H_2S gas.

56) For facilities where the maximum H_2S content of the inlet gas is greater than 0.01 mol/kmol, the applicant must ensure that there are no off-lease odours from trucking operations and the transfer of fluids containing H_2S gas by implementing a method to control off-lease odours, such as the use of a pressurized/sealed vessel.

57) For facilities where the maximum H_2S content of the inlet or vented gas is greater than 10 mol/kmol, the applicant must include a suitable method to recover and handle vapours from stock tanks or burn the vapours. When designing the facility, the applicant must ensure that stock tank vapours are not discharged to the atmosphere without proper combustion of the sulphur compounds.

58) If a vapour recovery unit is required because the composition of the inlet stream has changed and the gas stream now contains more than 10 mol/kmol of H_2S, the licensee must submit an application to change the category type of the facility to Category C, D, or E.

Applicants are not required to file a licence amendment application for the purpose of installing a vapour recovery unit at an existing Category C, D, or E facility, provided that the landowner has been provided with a written description of the project and has no concerns and the facility meets the NO_x requirements and the noise requirements at the nearest residence.

59) The applicant must file a nonroutine application and include an explanation of the proposed method of vapour control when the maximum inlet H_2S content of the gas is greater than 10 mol/kmol and a vapour recovery unit will not be installed.

5.9.12 Noise Requirements

All facilities under the ERCB's jurisdiction must meet the requirements of *Directive 038: Noise Control*.

A noise impact assessment (NIA) ensures that the applicant has considered possible noise impacts before a facility is constructed or operated. The NIA predicts the expected design sound level from the facility at the nearest or most affected residence.

60) Applicants must discuss noise matters with area residents during the design, construction, and operating phases of the facility.

61) An NIA must be completed prior to submission of a facility application for any new permanent facility or for modifications to existing permanent facilities if there is a reasonable expectation of a continuous or intermittent noise source.

   a) For the purpose of an NIA, a permanent facility is a facility in operation for more than 2 months.

62) If the NIA indicates that the permissible sound level will be exceeded, the applicant must consider further mitigative measures.

   a) If mitigative measures are not practical, the applicant must file a nonroutine licence application and explain why mitigative measures are not practical.

63) The ERCB expects the applicant to use a reasonable technical basis for the values presented in the NIA, such as computer modelling, field measurements of similar

equipment, accepted acoustical engineering examples from literature, and calculations.

64) If the applicant is using manufacturer's specifications, the sound level ratings must represent free or far field conditions.

    a) Sound level ratings at 1 m are not acceptable for inverse square law calculations.

See *Directive 038* for further discussion.

5.9.13 Production Measurement Guidelines

The ERCB provides measurement and reporting requirements and guidelines to assist those applying to construct, operate, or modify any upstream oil or gas production, transportation, injection/disposal, or processing facility. The applicant is expected to meet all requirements of the production measurement references listed in Appendix 2.

65) The licensee must accurately measure and report volumes of produced oil, gas, and water in order to

    a) provide reservoir management information,
    b) ensure that the appropriate Alberta Crown royalties are paid,
    c) allow for the accurate assessment of each equity owner's share of production, and
    d) allow for the detection of escaped substances to the environment.

66) Applicants of surface facilities associated with in situ oil sands schemes must ensure that the Measurement, Accounting, and Reporting Plan has been approved by the ERCB Operations Group prior to submitting a *Directive 056* application.

5.9.14 Alberta Environment

All applicants should be aware that additional licences or approvals might be required from AENV in accordance with the *Environmental Protection and Enhancement Act*.

If a facility requires both an ERCB and an AENV licence/approval and there are outstanding concerns/objections that were received during the participant involvement program, the applicant is encouraged to advertise both applications together through a joint notice. The applicant must ensure that all *Directive 056* participant involvement requirements have been met.

67) Flare stacks must be designed to meet the *Alberta Ambient Air Quality Objectives* (*AAAQO*) and be in accordance with methods outlined in *Directive 060* and AENV's *Air Quality Model Guideline*.

68) Based on dispersion modelling, the ground-level concentration of SO_2 must meet the *AAAQO*, based on guidance from the *Air Quality Model Guideline* and *Directive 060*.

69) The applicant must ensure that emissions from all combustion sources on site are reviewed in accordance with methods outlined in the *Air Quality Model Guideline*.

70) When dispersion modelling is required by the *Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants*, predicted ground-level concentrations of NO_2 must meet the *AAAQO*, based on guidance from the *Air Quality Model Guideline*.

5.9.15 Alberta Community Development

71) For proposed new facility licences or licence amendments that require a lease expansion on Freehold lands, the applicant must consult Alberta Community Development's *Listing of Significant Historical Sites and Areas* to determine whether the proposed facility site will require Alberta *Historical Resources Act* clearance prior to filing a licence application. This list outlines when a *Historical Resources Act* clearance is required and provides instructions. See also ERCB *IL 82-11: Preservation of Archaeological, Palaeontological, and Historical Resources*.

    a) If the proposed new or expanded lease is located on land identified in the list, the applicant must

        i) obtain *Historical Resources Act* clearance prior to submitting a licence application, or

        ii) submit the licence application as nonroutine if Alberta Community Development has not granted clearance, and include a detailed explanation.

5.9.16 ERCB Environmental Requirements

In 1993, the ERCB issued *IL 93-09: Oil and Gas Developments Eastern Slopes (Southern Portion)*, setting guidelines and expectations for oil and gas development in this region. These expectations were further clarified by the ERCB in *Bulletin 2007-35: Clarification of Informational Letter (IL) 93-09: Oil and Gas Development Eastern Slopes (Southern Portion)*.

72) If the proposed facility is located within the Eastern Slopes (Southern Portion), the applicant must meet the General Expectations described in *IL 93-09* by:

    a) preparing development plans beyond the initial exploration stage, taking into consideration current stages, such as

        i) pool delineation (initial),

        ii) pool delineation (subsequent),

        iii) pool development, and

    b) developing environmental assessments, as outlined in *IL 93-09*.

The ERCB will review all applications and the supporting information submitted as part of a nonroutine application prior to issuing a licence.

5.9.17 Working Interest Participants

73) The applicant must be a working interest participant to apply for or hold a facility licence. It is not necessary to identify working interest participants for licence amendment applications. Once licensed, working interest participants are updated through the ERCB Corporate Compliance Group.

5.9.18 Additional Application Requirements

74) Applicants must review Section 8: Additional Application Requirements and meet all requirements applicable to the proposed location.

5.10 Audit Documentation Requirements—Schedule 2: Facility Licence Application

Table 5.6 is a checklist for facility application audit submissions and provides a summary of documents required for submission. Please refer to the sections cited for full details. The ERCB may request the submission of additional information not listed in the table that may assist in completing the review of an application.

75) For applications selected for audit review, licensees must submit the documents detailed below within 14 calendar days of notice of audit or within the time frame directed by the ERCB.

76) ERCB Facilities Applications must be able to determine from the audit documents that the applicant fulfilled all requirements to ensure regulatory compliance prior to filing the application.

77) For new Category C and D gas plants and all Category E applications, the applicant must submit the applicable audit documentation with the application for review.

The detailed list of audit documents below corresponds to the steps found in Schedule 2. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

5.10.1 Step 1: Identification

No documentation required.

5.10.2 Step 2: Participant Involvement Requirements

5.10.2.1 Participant Involvement Map Requirements

78) The licensee must submit map(s) that illustrate

- a) the location of the facility,
- b) the location of all parties included in the participant involvement program (e.g., residents, similar facilities),
- c) the area of investigation used in the personal consultation and notification program,
- d) the location of the nearest surface development,
- e) the EPZ and location of residents within the calculated EPZ (if applicable), and
- f) the area of investigation used in the industry notification program (if applicable).

5.10.2.2 Industry Notification Requirements

79) The licensee must submit a record of contact with other industry parties that includes

- a) name, address, and telephone number of all parties contacted,
- b) copies of all related correspondence received,

c) disclosure meeting minutes, including
    i) date of meeting,
    ii) meeting notice and/or invitation,
    iii) invitation list, and
    iv) names, addresses, and telephone numbers of all meeting participants, and

d) project information presented at meetings or otherwise distributed.

5.10.2.3 Personal Consultation and Notification Requirements

80) The applicant must submit a record of the personal consultation and notification program that was conducted. The applicant must use a tabular format similar to the Sample Participant Involvement Summary Form (see Appendix 4).

81) The summary must include

    a) name of each party (e.g., landowner, occupant, resident) included in the personal consultation and notification program,
    b) legal land description for each party,
    c) a description of each party's interest in the land (e.g., Crown disposition holder, landowner, resident, facility licensee),
    d) date and type of contact conducted with each party (e.g., telephone conversation, registered mail, personal meeting),
    e) date the ERCB brochure and *EnerFAQs No. 7* were distributed where required,
    f) date the applicant's project-specific information package was distributed,
    g) date the supplementary EnerFAQs were provided, and
    h) date confirmation of nonobjection was obtained where required.

5.10.2.4 Confirmation of Nonobjection

82) The ERCB does not require that confirmation of nonobjection be in the form of a signature; however, documentation must be submitted when available.

    Confirmation of nonobjection may consist of one of the following documents, depending on the nature of the proposed development:

    a) Freehold lease agreement (Freehold also includes Federal Lands and Provincial Special Area Board[s] Land)
        i) The licensee must submit a copy of the agreement that confirms the parties involved, the date of agreement, and the location of land involved.
    b) Crown disposition (i.e., signed Mineral Surface Lease, Miscellaneous Lease, or Pipeline Installation Lease; executed Area Operating Agreement or Temporary Field Authorization)
        i) In the case of an Area Operating Agreement (AOA), the licensee must submit copies of the following AOA documents:
            - the "title page" (including the details of the expiry date, company name, and area of operation)
            - the "sign-off page" (including when the agreement was executed)

        - geographical map and locations list

    ii) For all other Crown dispositions, the licensee must submit a copy of the agreement that confirms the parties involved, the execution of the agreement (signature), the date of the agreement, and the location of the land involved.

  c) Signed document that identifies the details of the proposal (e.g., signatory page from the applicant's information package)

83) If confirmation of nonobjection is verbal, the licensee must document (log) the name of the party providing verbal nonobjection and the date on which verbal nonobjection was obtained.

5.10.2.5 Information Packages

84) The licensee must submit a copy of the project-specific information package that was distributed to the parties included in the participant involvement process.

It is not necessary to include a copy of the ERCB's documents in the audit submission. However, details of its distribution must be included.

5.10.2.6 Resolved Concerns and Objections

85) If concerns/objections were received and resolved during the course of the participant involvement program, the licensee must submit

  a) a record and explanation of any concerns/objections received, and

  b) documentation confirming the resolution of any concerns/objections.

5.10.2.7 Sour Gas Planning and Proliferation

86) For cases where there are residents located within the EPZ of the facility, the applicant must submit

  a) the assessment of existing infrastructure required by Section 8.3.2, and

  b) the updated expanded project-specific information package as described in Section 8.3.2.

5.10.3 Step 3: Emergency Response Planning

87) The licensee must keep a copy of the corporate level ERP or, where required, the specific ERP on file. It is not required for inclusion in the audit submission.

  a) The licensee must include in the audit submission a statement confirming that it has an approved corporate plan and/or that a site-specific plan will be approved prior to commencing operations.

5.10.4 Step 4: Application Type

88) For Category B facilities, the licensee must submit a gas analysis representative of the inlet stream.

5.10.5 Step 5: Design Criteria

89) For all facilities, the licensee must submit a written description of the proposed process scheme and a process flow diagram.

90) For custom treating facilities, the licensee must submit an inlet analysis to determine the percentage of oil, water, and solids.

91) For heavy oil facilities, the licensee must submit a representative oil analysis.

92) For facilities with sources of NO_x and CO_2 emissions, the licensee must submit

   a) a breakdown and total of NO_x and CO_2 emissions for all sources in t/d and kg/h respectively,

   b) manufacturer specifications to confirm NO_x and CO_2 emissions, and

   c) diagrams to demonstrate that the exhaust stack height requirements of *IL 88-05* are met if the total NO_x emissions are less than 16 kg/h.

93) For facilities with continuous flaring, venting, or incineration, the licensee must submit

   a) a list of all sources, and

   b) the results of the ground level radiant heat intensity calculation.

5.10.6 Step 6: Technical Information

5.10.6.1 Equipment Spacing Requirements

94) The licensee must submit a site-specific plot plan showing

   a) equipment placement,

   b) the distances between equipment, and

   c) the distance from equipment to surface improvements, vegetation, water bodies, and roads (within 100 m of the lease boundary).

95) The licensee must state whether ESD valves are automated or manual control fail-safe mode.

5.10.6.2 Engineering and Safety Requirements

No documentation required.

5.10.6.3 Gas Conservation

96) For facilities with combined continuous flaring, venting, and incineration greater than 900 m^3/d recorded in Step 5, the licensee must submit the *Directive 060* economic evaluation and decision tree analysis. If it is not feasible to complete the conservation evaluation until the well test is completed, the licensee must submit an explanation of related reasons and a description of plans to complete the evaluations after initial production.

97) For gas processing plants with continuous flaring/incineration, the licensee must submit documentation indicating that the requirements of *Directive 060*, Section 5.1, have been met.

5.10.6.4 Noise Guidelines

98) For all facilities with noise-generating equipment, the licensee must submit a copy of the noise impact assessment prepared in accordance with *Directive 038*.

5.10.6.5 Storage Requirements

99) For facilities where products and materials will be stored on site, the licensee must submit a list of materials that will be stored and a description of the storage method (*Directive 055*), including details of

   a) design and construction,

   b) leak detection,

   c) secondary containment,

   d) weather protection, and

   e) primary containment type and size.

5.10.6.6 Waste Management

No documentation required.

5.10.6.7 Production Measurement Requirements

100) For all facilities, the licensee must submit a list and provide the location of each type of meter proposed for each measurement point.

101) For facilities with continuous flaring, venting, and incineration recorded in Step 9, the licensee must submit documentation to confirm how measurement/estimation procedures meet the requirements of *Directive 060*.

5.10.6.8 NO_x Emissions

102) For facilities where the NO_x emissions are less than 16 kg/h, the licensee must submit documentation or a diagram demonstrating that the stack height for each source is at least 1.2 times the peak building height. If dispersion modelling was conducted, the licensee must submit the following:

   a) documentation that confirms dispersion modelling was conducted in accordance with the *Air Quality Model Guideline*,

   b) the source parameters, locations, elevations, and NO_x emission rates for all sources,

   c) predicted maximum ground-level NO_2 concentrations,

   d) the name of the dispersion model used,

   e) a description of meteorological data used, and

   f) a terrain map of the study area.

5.10.6.9 Alberta Environment Approval/Registration

103) For facilities with total NO_x emissions more than 16 kg/h and all Category C, D, and E gas plants, the licensee must submit the AENV approval or registration number, if available. If the facility or amendment to the licence has not been registered or approved by AENV, the licensee must submit the following to demonstrate that it will meet the *Alberta Ambient Air Quality Objectives* prior to approval:

   a) documentation that confirms dispersion modelling was conducted in accordance with the *Air Quality Model Guideline*,

b) the source parameters, locations, elevations, and NO_x emission rates for all sources,

c) predicted maximum ground-level NO_2 concentrations,

d) the name of the dispersion model used,

e) a description of meteorological data used, and

f) a terrain map of the study area.

5.10.6.10 Environmental Impact Assessment (EIA)

No documentation required.

5.10.6.11 *Historical Resources Act* Clearance

104) Where applicable, the licensee must submit documentation showing that it received clearance from Alberta Community Development prior to submitting the facility licence application.

5.10.6.12 ERCB Environmental Requirements

No documentation required.

5.10.6.13 Working Interest Participant Requirements

No documentation required.

Schedule 2.1: Working Interest Participants

No documentation required.

5.11 Audit Documentation Requirements for Schedule 2.2: Gas Plants—Facilities

105) For applications selected for audit review, licensees must submit the documents detailed below within 14 calendar days of notice of audit or within the time frame directed by the ERCB.

106) ERCB Facilities Applications must be able to determine from the audit documents that the applicant fulfilled all requirements to ensure regulatory compliance prior to filing the application.

107) For new Category C and D gas plants and all Category E applications, the applicant must submit the applicable audit documentation with the application for review.

The detailed list of audit documents below corresponds to the steps found in Schedule 2.2. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

5.11.1 Step 1: Identification

No documentation required.

5.11.2 Step 2: Total Recovered Products

108) For gas processing, straddle, fractionation, and sulphur recovery plants, the licensee must submit

a) a plant material balance for design conditions that matches the streams and equipment shown on the PFD and includes

    i) maximum H_2S content for both the inlet rate and the acid gas rate,
    ii) design rates for the inlet and recovered products,
    iii) maximum acid gas rate, and
    iv) continuous sulphur emission rate; and

  b) an explanation of any differences between the applied-for rates and those contained in the plant material balance.

5.11.3 Step 3: Technical Information—Sour Gas Proliferation

109) For new Category C and D and all Category E gas plants, the licensee must submit documentation regarding the alternatives to construction, including

  a) evaluation of the technical and economic feasibility of using or modifying existing infrastructure,

  b) an assessment of the social and economic effects of the alternatives, and

  c) design parameters and available capacity of existing Category C, D, and E gas plants that were considered.

5.12 Audit Documentation Requirements for Schedule 2.3: H_2S Information—Facilities

110) For applications selected for audit review, licensees must submit the documents detailed below within 14 calendar days of notice of audit or within the time frame directed by the ERCB.

111) ERCB Facilities Applications must be able to determine from the audit documents that the applicant fulfilled all requirements to ensure regulatory compliance prior to filing the application.

112) For new Category C and D gas plants and all Category E applications, the applicant must submit the applicable audit documentation with the application for review.

The detailed list of audit documents below, corresponds to the steps found in Schedule 2.3. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

5.12.1 Step 1: Identification

No documentation required.

5.12.2 Step 2: Gas Treating and Processing Information

113) For facilities where an H_2S scavenger unit is proposed, the licensee must submit

  a) a description of the H_2S scavenger system proposed, and

  b) the nature of the spent scavenger and its disposition.

114) For all facilities where the inlet H_2S content is more than 0.01 mol/kmol, the licensee must submit a wellhead or inlet gas analysis representative of the facility's inlet stream(s).

115) For facilities with continuous sulphur emissions, the licensee must submit a breakdown of all sources that contribute to the total value (e.g., flare, produced water tanks).

116) For facilities where the sulphur inlet is greater than 1 t/d, the licensee must submit an explanation of how the facility meets the current sulphur recovery guidelines.

5.12.3 Step 3: Technical Information—Setback Requirements

5.12.3.1 Setback Requirements

117) The licensee must submit

   a) the input parameters used to calculate the potential H_2S release volume of the highest level of pipeline associated with the facility (inlet or outlet streams),

   b) a pipeline map showing ESD and check valve locations, and

   c) the pipeline licence and line number for the highest level of pipeline associated with the facility.

5.12.3.2 Vapour Recovery

118) For facilities where the inlet H_2S is greater than 10 mol/kmol, the licensee must submit a description of the method proposed to control odours from storage tanks and other sources of vented gas, including the type of system.

119) For facilities where a product containing greater than 0.01 mol/kmol of H_2S will be transported, the licensee must submit documentation that confirms that a method to control off-lease odours during the transport of fluids containing H_2S gas is in place.

5.12.3.3 SO_2 Emissions and Stack Design

120) For facilities with continuous flaring/incineration where the inlet H_2S is less than 10 mol/kmol, the licensee must submit the heating value of the gas stream for the flare/incinerator.

121) For facilities where the inlet H_2S is greater than 10 mol/kmol, the licensee must submit

   a) a schematic diagram or description of the flare/incinerator that must show a continuous pilot and/or automatic igniter, flame arrestor, and stack height,

   b) for incinerators, the residence time and exit temperature, and

   c) documentation that demonstrates that the *AAAQO* will be met for SO_2 emissions from continuous sources and from nonroutine events. The documentation must clearly show that dispersion modelling was conducted in accordance with the *Alberta Air Quality Model Guideline* and *Directive 060* and should include (but not be limited to) the following:

      i) the source parameters, locations, elevations, and SO_2 emission rates for all sources,

      ii) predicted maximum ground-level SO_2 concentrations,

      iii) the name of the dispersion model used,

      iv) a description of meteorological data used, and

      v) a terrain map of the study area.

5.13 Audit Documentation Requirements for Schedule 2.4: Compressors/Pumps—Facilities

122) For applications selected for audit review, licensees must submit the documents detailed below within 14 calendar days of notice of audit or within the time frame directed by the ERCB.

123) ERCB Facilities Applications must be able to determine from the audit documents that the applicant fulfilled all requirements to ensure regulatory compliance prior to filing the application.

124) For new Category C and D gas plants and all Category E applications, the applicant must submit the applicable audit documentation with the application for review.

The detailed list of audit documents below corresponds to the steps found in Schedule 2.4. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

5.13.1 Step 1: Identification

No documentation required.

5.13.2 Step 2: Compressors and Step 3: Pumps

125) For facilities with compressors/pumps, the licensee must submit manufacturer's specifications for the proposed compressor that confirm emission ratings, unit size, and driver type.

Table 5.6 provides a summary of documents required for audit submission. Please refer to the sections cited for full details. The ERCB reserves the right to request the submission of additional information not listed below that may assist in completing the review of an application. For a nonroutine application proceeding to a hearing, the ERCB may require that the entire audit package for the application be submitted for review.

Table 5.6. Facility application audit checklist

Section No.	Y	N	N/A	Audit Documents
SCHEDULE 2: Facility Licence Application				
5.10.2 Step 2: Participant Involvement Requirements				
5.10.2.1 Participant Involvement Map Requirements				
				Map
5.10.2.2 Industry Notification Requirements				
				Record of contact with other industry parties, including name, address, telephone number
				Copies of all correspondence between parties
				Minutes of meetings held, including • Date of meeting • Meeting notice and/or invitation • Invitation list • Name, address, and phone number of all meeting participants
				Copies of the project information presented at meetings or otherwise distributed
5.10.2.3 Personal Consultation and Notification Requirements				
				Participant Involvement Summary
5.10.2.4 Confirmation of Nonobjection				
				Freehold lease agreement
				Crown disposition
				Signed information document
				Documented verbal consent
				Written agreement to proceed to Surface Rights Board
5.10.2.5 Information Packages				
				Applicant's project-specific information package
				List of all documents provided to participants
				Documented refusal of information packages
5.10.2.6 Resolved Concerns and Objections				
				A record and explanation of any concerns/objections received that were resolved
				Documentation demonstrating resolution of the concerns/ objections received
5.10.2.7 Sour Gas Planning and Proliferation				
				For cases where there are residents located within the EPZ of the facility, the applicant must submit the assessment of existing infrastructure required by Section 8.3.2
				The additional project-specific information package details identified in Section 8.3.2
5.10.3 Step 3: Emergency Response Planning				
				Statement confirming that a corporate or specific plan will be in place prior to operation
5.10.4 Step 4: Type of Application				
				For Category B facilities, a representative gas analysis
5.10.5 Step 5: Facility Design Criteria				
				Written description of the proposed process scheme at the facility
				Process flow diagram
				For custom treating facilities, an inlet analysis for oil, water, and solids
				For facilities handling heavy oil, a representative oil analysis (continued)

Table 5.6. Facility application audit check list (continued)				
Section No.	**Y**	**N**	**N/A**	**Audit Documents**
				Breakdown of the sources of NO_x and CO_2 emissions
				Manufacturer specifications to confirm NO_x and CO_2 emissions
				Diagrams to demonstrate that stack height requirements have been met
				List of all sources of continuous flaring, incineration, and venting
				The results of the ground-level radiant heat intensity calculation for the flare/incinerator
5.10.6	**Step 6: Technical Information**			
5.10.6.1	**Equipment Spacing**			
				Site-specific plot plan
				Indication of whether ESD valves are automated or manual control fail-safe mode
5.10.6.3	**Gas Conservation**			
				Economic evaluation of gas conservation and decision tree analysis or an explanation of why the evaluation cannot be completed until the well test is complete, and a description of the plans to complete the evaluation after well testing
				For gas processing plants with continuous flaring/incineration, documentation to confirm that the gas conservation requirements of *Directive 060*, Section 5.1, have been met
5.10.6.4	**Noise Guidelines**			
				A copy of the noise impact assessment
5.10.6.5	**Storage Requirements**			
				List of material stored and size and type of storage tank(s) proposed
				Description of design and construction, leak detection, secondary containment, and weather protection for each tank proposed
5.10.6.7	**Production Measurement Requirements**			
				A list and location of each meter proposed
				Documentation to confirm that the measurement/estimation procedures for flared, incinerated, and vented volumes meet the requirements of *Directive 060*
5.10.6.8	**NO_x Emissions**			
				For facilities where the NO_x emissions are less than 16 kg/h, documentation or a schematic diagram for each source stack demonstrating that the stack height is 1.2 times the peak building height
				If modelling was conducted, documents that clearly show that dispersion modelling was conducted in accordance with the *Alberta Air Quality Model Guideline* - the source parameters, locations, elevations, and NOx emission rates for all sources - predicted normal and maximum ground-level NOx concentrations - the name of the dispersion model used - a description of meteorological data used - a terrain map of the study area
5.10.6.9	**Alberta Environment Approval/Registration**			
				A copy of the AENV approval or registration number if available
				If approval or registration is not completed, - documents that clearly show that dispersion modelling was conducted in accordance with the *Alberta Air Quality Model Guideline* - the source parameters, locations, elevations, and NOx emission rates for all sources - predicted normal and maximum ground-level NOx concentrations - the name of the dispersion model used - a description of meteorological data used - a terrain map of the study area (continued)

Table 5.6. Facility application audit check list (continued)

Section No.	Y	N	N/A	Audit Documents
5.10.6.11 Historical Resources Act (Freehold land only)				
				Alberta Community Development approval dated prior to application
5.11 SCHEDULE 2.2: Gas Plants—Facilities				
5.11.2 Step 2: Total Recovered Products				
				A plant material balance
				An explanation of any differences between design rates applied for and those from the material balance
5.11.3 Step 3: Technical Information				
				For new Category C, D, and E plants, the results of the feasibility evaluation of existing plants that was conducted
5.12 SCHEDULE 2.3: H_2S Information—Facilities				
5.12.2 Step 2: Gas Treating and Processing Information				
				Description of the H_2S scavenger system proposed, nature of spent chemical, and its disposition
				Wellhead or inlet gas analysis representative of facility inlet
				Breakdown of all sources that contribute to the continuous sulphur emissions
				Explanation of how the facility meets the current sulphur recovery requirements
5.12.3 Step 3: Technical Information				
5.12.3.1 Setback Requirements				
				Input parameters used to calculate the potential H_2S release volume of the highest level of pipeline associated with the facility
				Pipeline map showing ESD and check valve locations
				Pipeline licence and line number for the pipeline that determined the required setback
5.12.3.2 Vapour Recovery				
				For facilities with H_2S > 10 mol/kmol, a description of the method proposed to handle stock tank vapours so that proper combustion occurs
				For facilities with H_2S > 0.01 mol/kmol, a description of how off-lease odours will be controlled during the transfer and transport of fluids containing H_2S
5.12.3.3 SO_2 Emissions and Stack Design				
				Schematic diagram or description of the flare/incinerator
				Documentation that demonstrates the *AAAQO* will be met for SO_2 emissions from continuous sources and from nonroutine events. The documentation must clearly show that dispersion modelling was conducted as per the *Alberta Air Quality Model Guideline* and *Directive 060*
				The source parameters, locations, elevations, and SO_2 emission rates for all sources
				Predicted maximum ground-level SO_2 concentrations
				Name of the dispersion model used
				Description of meteorological data used
				Terrain map of the study area
				For incinerators, the residence time and exit temperature
				For facilities with less than 10 mol/kmol H_2S, the heating value of the gas stream for the flare/incinerator (continued)

Table 5.6. Facility application audit check list (concluded)

Section No.	Y	N	N/A	Audit Documents
5.13 SCHEDULE 2.4: Compressors/Pumps—Facilities				
5.13.2 Step 2: Compressors and Step 3: Pumps				
				Manufacturer specifications to confirm emission ratings, type of driver, and size of compressor/pump

Table 5.7 provides a summary of documents required for nonroutine application submission by step and question. Please refer to the questions specified in Sections 5.14.1 through 5.14.5 for full details.

Table 5.7. Facility application nonroutine checklist

Section No.	Y	N	N/A	Nonroutine Submissions
SCHEDULE 2: Facility Licence Application				
Step 2: Participant Involvement Requirements				
Question 1: Consultation and notification requirements have been met: Public				
				The participant involvement summary of all personal consultation and notification that have been completed
				Name, address, telephone number, and legal land description of participants for which personal consultation and notification requirements have not been completed
				Detailed explanation of why all personal consultation and nonobjection requirements cannot be completed
				Detailed explanation of why all notification requirements cannot be completed
				An explanation of how you would like the ERCB to proceed with this application
Question 1: Consultation and notification requirements have been met: Industry				
				Record of contact with industry parties conducted
				Copies of correspondence between parties
				Minutes of meetings held
				Copies of information distributed
				A summary of parties for which industry notification has not occurred
				A detailed explanation of why all industry notification requirements were not completed
				An explanation of how you want the ERCB to proceed with your application
Question 2: There are outstanding objection/concerns related to this application				
				Name, address, telephone number, and legal land description of participant(s) with outstanding concerns/objections
				Copy of the written concern/objection (or summary of issues if not available)
				A chronology of the participant involvement program conducted with the party
				A discussion of steps taken to mitigate the outstanding concerns/objection
				Copy of the applicant's project-specific information package
				List of other documents distributed
				Documentation in support of the Battle Lake application requirements (Section 8)
				Explanation of how you want the ERCB to proceed with your application
				If there are residents within the EPZ, you must also attach • the assessment of existing infrastructure required by Section 8.3.2 • the updated expanded project-specific information package, as described in Section 8.3.2 • a copy of an area plan described in Section 8.3.3 if it was completed (continued)

Table 5.7. Facility application nonroutine check list (continued)

Section No.	Y	N	N/A	Nonroutine Submissions
Step 6: Technical Information				
Question 2: Equipment spacing requirements will be met				
				Detailed explanation of what equipment will not meet the requirements and why
				Description of fluids involved and all sources of gaseous vapours
				Topographic map (if terrain is the cause)
				Description of how safety will not be compromised by a relaxation from the requirement, including safety assessment and response time for call-out
Question 3: The facility will meet all current and applicable engineering and safety standards				
				Detailed explanation of nonconformance with engineering and safety standard
Question 4a: If YES, gas flaring, incinerating, or venting will comply with the requirements of *Directive 060*				
				Description of exemption being proposed and a detailed explanation of reasons
				Explanation that includes plans to complete gas conservation evaluation (if not completed prior to application)
Question 5: The facility meets ERCB noise control requirements (*Directive 038*)				
				A copy of the noise impact assessment
				An explanation of why the noise requirements will not be met
				Discussion of the mitigative measures proposed or a discussion of why mitigative measures are not practical
				Map showing proximity of residents
Question 6: ERCB storage requirements will be met (*Directive 055*)				
				Explanation of why the storage requirements will not be met, and a description of alternative storage methods
				Discussion of how the environment will not be compromised by a relaxation of the requirements
Question 8: ERCB production measurement requirements will be met				
				Explanation of why measurement will not meet the ERCB requirements and a discussion of the proposed alternative
Question 9: NO_x air emissions meet the *Alberta Ambient Air Quality Objectives*				
				Explanation of why the *Alberta Ambient Air Quality Objectives* will not be met
				Documents confirming that dispersion modelling was conducted in accordance with the *Alberta Air Quality Model Guideline*, including - the source parameters, locations, elevations, and NOx emission rates for all sources - predicted normal and maximum ground-level NO_2 concentrations - the name of the dispersion model used - a description of meteorological data used - a terrain map of the study area
Question 14a: If YES, Alberta Community Development has granted clearance for the facility site				
				Explanation as to why Alberta Community Development has not provided clearance
Question 16: The proposed facility meets the ERCB environmental requirements				
				A detailed explanation of why the facility does not meet ERCB environmental requirements and what measures will be in place to ensure the facility will not have a negative impact on the environment
				If the facility is located within the area affected by *IL 93-09*, you must attach all material required by that IL (continued)

Table 5.7. Facility application nonroutine check list (concluded)				
Section No.	Y	N	N/A	Nonroutine Submissions
SCHEDULE 2.2: Gas Plants—Facilities				
Step 3: Technical Information				
Question 1: A sour gas proliferation review has been conducted in accordance with *ID 2001-03*				
				A detailed explanation as to why the requirements cannot be met
SCHEDULE 2.3: H_2S Information—Facilities				
Step 2: Gas Treating and Processing Information				
Acid gas disposal method: Other				
				Description of the proposed alternative acid gas disposal process and supporting technical documents/papers discussing the method
Sulphur recovery process: Other				
				Description of the proposed process, including a supporting process flow diagram and material balance
				Technical documents/papers discussing the process
				Explanation of how the proposed process will meet the sulphur recovery requirements
				Available correspondence from Alberta Environment related to the process
				Results and description of the process in operation at another facility
Step 3: Technical Information				
Question 1: Sour setback requirements have been met				
				Detailed explanation of why the setbacks cannot be met
Question 2: A method to recover vapours will be implemented				
				Detailed explanation of why vapour recovery will not be installed
				Discussion of mitigative measures to ensure that off-lease odours do not occur
Question 3: SO_2 air emissions meet the *Alberta Ambient Air Quality Objectives*				
				Schematic diagram or description of the flare/incinerator
				The source parameters, locations, elevations, and SO_2 emission rates for all sources
				Predicted maximum ground-level SO_2 concentrations
				Name of the dispersion model used
				Description of meteorological data used
				Terrain map of the study area
				For facilities with less than 10 mol/kmol H_2S, the heating value of the gas stream for the flare/incinerator
				Description of the magnitude and frequency of potential SO_2 exceedance and information on situations leading to SO_2 exceedance (operational scenarios, meteorological conditions)

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 2

Facility Licence Application

DAY MONTH YEAR ___ ___ ___

APPLICANT'S REFERENCE ____________

1. IDENTIFICATION

Applicant BA Code ________ Applicant Name ____________________

2. PARTICIPANT INVOLVEMENT REQUIREMENTS

1. Consultation and notification requirements have been met: Public .... YES ☐ **NO** ☐

Industry .... YES ☐ **NO** ☐

2. There are outstanding objections/concerns related to this application .... **YES** ☐ NO ☐

3a. Distance to nearest surface development ________km

3b. Distance to nearest residence ________km

3. EMERGENCY RESPONSE PLANNING

1. The applicant will meet ERCB requirements for emergency response planning .... YES ☐

2a. The facility requires a new emergency response plan .... YES ☐ NO ☐

2b. The facility requires an amendment to an existing emergency response plan .... YES ☐ NO ☐

4. APPLICATION TYPE

Category Type: ____________ Description: ____________

☐ New Licence ☐ Licence Amendment ☐ Temporary Facility

Maximum H_2S Content of Inlet Gas: ________ ppm ________ mol/kmol ________%

Licence Amendment (LA) Type

- ☐ 1-Change category and/or type
- ☐ 2-Install/remove compression
- ☐ 3-Change maximum licensed inlet rates
- ☐ 4-Change H_2S content of inlet gas
- ☐ 5-Install/remove injection/disposal pumps
- ☐ 6-Change product/product recovery rates
- ☐ 7-Add regenerative sweetening
- ☐ 8-Add nonregenerative sweetening
- ☐ 9-Change maximum continuous sulphur emissions
- ☐ 10-Extend expiry date
- ☐ 11-Change status to permanent
- ☐ 12-Add new flare/incinerator stack
- ☐ 13-Increase sulphur recovery efficiency
- ☐ 14-Decrease sulphur recovery efficiency
- ☐ 15-Change acid gas disposal method
- ☐ 16-Degrandfather sulphur recovery facility

Location	Latitude (NAD 83)	Longitude (NAD 83)
LE LSD SEC TWP RGE ___ ___ ___ ___ ___ W ___ M	____________	____________

Existing Facility Licence No.	Linking Facility Licence No.	Temporary/Extended Facility Expiry
F____________	F____________ Direct to Sales ☐	DAY MONTH YEAR ___ ___ ___

ERCB-Designated Field or Strike Area

(Schedule 2 continued on next page)

Applicant Name ____________________ Applicant's Reference ____________________

5. DESIGN CRITERIA

Total Inlet Rates	**Raw Gas**	**Oil/Bitumen**	**Condensate**	**Water**	**Sulphur**
	________ 10^3 m^3/d	________ m^3/d	________ m^3/d	________ m^3/d	________ t/d
Total Continuous Emissions Rates	**NO_x**	**CO_2**	**Flaring/Incineration**	**Venting**	
	________ kg/h	________ t/d	________ 10^3 m^3/d	________ 10^3 m^3/d	

6. TECHNICAL INFORMATION

1. The proposed facility is part of an experimental, primary, or commercial crude bitumen scheme .... YES ☐ NO ☐

1a. If YES, Scheme Approval No. ____________

2. Equipment spacing requirements will be met .... YES ☐ **NO** ☐

3. The facility will meet all current and applicable engineering and safety standards .... YES ☐ **NO** ☐

4. Gas will be continuously flared, incinerated, or vented .... YES ☐ NO ☐

4a. If YES, the gas flaring, incinerating, or venting will comply with the requirements of *Directive 060* .... YES ☐ **NO** ☐

5. The facility meets the ERCB *Noise Control* requirements (*Directive 038*) .... YES ☐ **NO** ☐

6. ERCB storage requirements will be met (*Directive 055*) .... YES ☐ **NO** ☐

7. ERCB oilfield waste management requirements will be met (*Directive 058*) .... YES ☐

8. ERCB production measurement requirements will be met .... YES ☐ **NO** ☐

9. NO_x air emissions meet the *Alberta Ambient Air Quality Objectives* .... YES ☐ **NO** ☐

10. Approval from or registration with Alberta Environment is required .... YES ☐ NO ☐

11. Alberta Environment requires an environmental impact assessment .... YES ☐ NO ☐

12. The proposed facility will include compressors (new licence only). If Yes, attach completed Schedule 2.4. .... YES ☐ NO ☐

13. The proposed facility will include pumps (new licence only). If Yes, attach completed Schedule 2.4. .... YES ☐ NO ☐

14. The proposed facility site requires *Historical Resources Act* clearance (Freehold land only) .... YES ☐ NO ☐

14a. If YES, Alberta Community Development has granted clearance for the facility site .... YES ☐ **NO** ☐

15. The licensee is the only working interest participant. If NO, attach a completed Schedule 2.1 .... YES ☐ NO ☐

16. The facility meets the ERCB environmental requirements .... YES ☐ **NO** ☐

5.14 How to Complete Facility Licence Application Schedules

5.14.1 How to Complete Schedule 2: Facility Licence Application

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Identification

Applicant BA Code	Enter the 4-digit business associate (BA) code issued to your company.
Applicant Name	Enter the full corporate name of the applicant assigned the BA code.

Step 2: Participant Involvement Requirements

*If you check a **BOLD** response, you must attach supporting information.*

1. Consultation and notification requirements have been met: Public

YES means that all applicable requirements as outlined in Table 5.1, the participant involvement requirements of Section 2, and Section 5.8 have been met prior to application submission.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met. This includes being unable to contact a party or receive confirmation of nonobjection, as required.

If **NO**, you must attach

- the participant involvement summary of all personal consultation and notification that has been completed;
- the name, address, telephone number, and legal land description of participants for which personal consultation and notification requirements have not been completed;
- a detailed explanation of why all personal consultation and nonobjection requirements cannot be completed;
- a detailed explanation of why all notification requirements cannot be completed; and
- an explanation of how you would like the ERCB to proceed with this application.

The ERCB will review the circumstances and decide if an exemption is warranted.

1. Consultation and notification requirements have been met: Industry

YES means that all operators of similar facilities and all licensees of unconnected wells within your area of investigation have been notified in accordance with the participant involvement requirements of Section 2, Section 5.8, Table 5.5, and the proliferation requirements of Section 5.9.3 prior to application submission.

NO means that due to exceptional circumstances, all applicable requirements cited above have not been met.

If **NO**, you must attach

- a record of contact with industry parties conducted;
- copies of correspondence between parties;
- minutes of meetings held;
- copies of information distributed;
- a summary of parties for which industry notification has not occurred;
- a detailed explanation of why all industry notification requirements were not completed; and
- an explanation of how you would like the ERCB to proceed with this application.

The ERCB will review the circumstances and decide if an exemption is warranted.

2. There are outstanding concerns/objections related to this application.

YES means that there are outstanding public and/or industry concerns/objections.

If **YES**, you must attach

- name, address, telephone number, and legal land description of the participant with outstanding concerns/objections;
- a copy of written concerns/objections received; if not available, a summary of issues;
- a chronology of the participant involvement program conducted with the party;
- steps taken to mitigate the outstanding concerns/objections;
- a copy of the project-specific information package provided;
- a list of other documents distributed; and
- a discussion of how you would like the ERCB to proceed with your application.

If there are residents within the EPZ, you must also attach

- the assessment of existing infrastructure required by Section 8.3.2;
- the updated, expanded project-specific information package, as described in Section 8.3.2; and
- a copy of an area plan described in Section 8.3.3 if it was completed.

YES also means the proposed facility is located within the Tier 1 area of Battle Lake and the documentation required by Section 8 is attached.

The ERCB will review only the concern/objection identified and decide if an exemption is warranted.

NO means there are no outstanding public and/or industry concerns/objections.

3a. Distance to nearest surface development	Enter the distance to the nearest surface development in kilometres (km) to 2 decimal places.
3b. Distance to nearest residence	Enter the distance to the nearest residence in kilometres (km) to 2 decimal places. For remote locations you may record the distance to the nearest urban centre. This distance should not be less than the distance to the nearest surface development.

Step 3: Emergency Response Planning

1. The applicant will meet ERCB requirements for emergency response planning. (Section 5.9.1)	YES means that the corporate or specific emergency response plan will meet the requirements of *Directive 071*.
2a. The facility requires a new emergency response plan.	YES means that a new emergency response plan is required. NO means that a new emergency response plan is not required. Do not complete this question for a Category B facility.
2b. The facility requires an amendment to an existing emergency response plan.	YES means that supplementary information will be submitted for an existing emergency response plan to include this facility. NO means that an existing emergency response plan will not be amended. Do not complete this question for a Category B facility.

Step 4: Application Type

Category Type	For each Schedule 2 attached, enter the applicable category type from Table 5.1.
Description	Enter the facility description from Table 5.1.
Temporary Facility	Check this box if you are applying for a facility that will operate for less than 1 year or if you are filing a licence amendment application to extend the licence expiry date of an existing temporary facility licence for up to an additional 6 months from the original licensed date.
Maximum H_2S Content of Inlet Gas	Enter the maximum H_2S content of the raw inlet gas in parts per million (ppm), moles per kilomole (mol/kmol) to 3 decimal places, or percentage (%) to 4 decimal places. For facilities with multiple inlet streams, record the H_2S value from the stream with the highest H_2S content.
Licence Amendment (LA) Type	Use this section if you are amending an existing ERCB licensed facility. From the following list you may check all that apply; however, only certain amendment combinations will be permitted on one Schedule 2 application. Table 5.4: Category Type Amendment Combinations describes the allowable licence amendment combinations. For all licence amendments listed below, full participant involvement requirements must be met or the application must be filed as nonroutine. This includes those amendments described as being not mandatory.

1 Change Category and/or Type	Check this box if you are applying to change the category and/or type of an existing licensed facility as described in Table 5.1. Depending on the amended category/type applied for, you may be required to complete Schedules 2.2, 2.3, and/or 2.4.
2 Install/Remove Compression	Check this box if you are applying to install and/or remove compression at an existing licensed facility. The removal of compression is not a mandatory application but will be processed at the applicant's request. You must also complete Schedule 2.4.
3 Change Maximum Licensed Inlet Rates	Check this box if you are applying to change the maximum licensed inlet rates of an existing licensed facility. The reduction of licensed inlet rates is not a mandatory application but will be processed at the applicant's request.
4 Change H_2S content of Inlet Gas	Check this box if you are applying to change the maximum H_2S content of the inlet gas of an existing licensed Category C, D, or E facility without a category and/or type change. You must also complete Schedule 2.3 for all Category C, D, and E facilities. The reduction of licensed H_2S content is not a mandatory application but will be processed at the applicant's request.
5 Install/remove Injection/Disposal Pumps	Check this box if you are applying to install and/or remove injection/disposal pumps at an existing licensed facility. The removal of injection/disposal pumps is not a mandatory application but will be processed at the applicant's request. You must also complete Schedule 2.4.
6 Change Product / Product Recovery Rates	Check this box if you are applying to change the product/product recovery rates of an existing licensed gas processing plant. You must also complete Schedule 2.2. The reduction of product recovery rates is not a mandatory application but will be processed at the applicant's request. Also, the increase in product recovery rates at a Category B gas plant is not a mandatory application but will be processed at the applicant's request.
7 Add Regenerative Sweetening	Check this box if you are applying to add a regenerative sweetening system to an existing licensed gas processing plant where there is no change to category or type. You must also complete Schedule 2.2 for Category B, C, D, and E gas processing plants and Schedule 2.3 for Category C, D, and E gas processing plants.
8 Add Nonregenerative Sweetening	Check this box if you are applying to add a nonregenerative sweetening system to an existing licensed Category C, D, or E facility. You must also complete Schedule 2.3.
9 Change Maximum Continuous Sulphur Emissions	Check this box if you are applying to change the maximum continuous sulphur emission rate of an existing licensed Category C, D, or E facility. You must also complete Schedule 2.3. The reduction in sulphur emissions is not a mandatory application but will be processed at the applicant's request.
10 Extend Expiry Date	Check this box if you are applying to extend the expiration date of a temporary facility licence or a permanent facility licence where construction has not commenced. A licence amendment application to

	extend the expiry date may only be submitted once and may not be combined with other types of licence amendment applications.
11 Change Status to Permanent	Check this box if you are applying to change the status of an existing temporary facility licence to become a permanent licensed facility.
12 Add New Flare/Incinerator Stack	Check this box if you are applying to add a new flare/incinerator stack at an existing facility.
13 Increase Sulphur Recovery Efficiency	Check this box if you are applying to increase only the sulphur recovery efficiency at an existing sulphur recovery facility. You must also complete Schedule 2.3.
14 Decrease Sulphur Recovery Efficiency	Check this box if you are applying to decrease the sulphur recovery efficiency at an existing sulphur recovery facility. You must also complete Schedule 2.3.
15 Change Acid Gas Disposal Method	Check this box if you are applying to change the acid gas disposal method at an existing licensed Category C, D, or E gas plant. You must also complete Schedule 2.3.
16 Degrandfather Sulphur Recovery Facility	Check this box if you are applying to degrandfather an existing licensed sulphur recovery facility to meet the requirements of *ID 2001-03: Sulphur Recovery Guidelines for the Province of Alberta*. You must also complete Schedule 2.3.
Location	Enter the surface location of the facility where construction will occur using the Dominion Land Survey system. If this is a licence amendment to a previously approved facility, enter the location exception (LE) assigned on the previous licence. Leave LE blank for all new facility applications.
Latitude (NAD 83)	Enter the latitude in decimals of degrees to 6 decimal places, based on the North American Datum 1983 (NAD 83), for the location of the entrance to the facility.
Longitude (NAD 83)	Enter the longitude in decimals of degrees to 6 decimal places, based on NAD 83, for the location of the entrance to the facility.
Existing Facility Licence No.	Enter the existing ERCB facility licence number for the facility being amended. If you are changing a temporary facility to permanent status, enter the facility licence number issued for the temporary operation.
Linking Facility Licence No. (Section 5.9.2)	Enter the facility licence number for the facility that receives and reports the production from this nonreporting facility. This also applies to temporary nonreporting facilities. Do not indicate a linking facility number if this site is a reporting facility.
Direct to Sales	Check the "Direct to Sales" box if production from a Category B or C compressor station is going directly into a sales gas pipeline.
Temporary/Extended Facility Expiry	Enter the date by which the temporary facility will be decommissioned. For new licence applications, this date must not be more than 1 year from

the date of application. You may file a licence amendment application to extend the expiry date of a temporary licence or to extend the expiration of a permanent facility licence up to an additional 6 months.

ERCB-Designated Field or Strike Area

Enter the ERCB-designated field or strike area in which the facility is or will be located.

If no field or strike area has been designated, leave this blank.

Field and strike area information may be obtained on the ERCB Web site www.ercb.ca.

Step 5: Design Criteria

For facility licence amendments, your answers should represent the total design rates associated with all on-site equipment for the location identified and should not represent only that equipment associated with the licence amendment (Section 5.9.4).

Total Inlet Rates

Enter the maximum daily design rates under normal operating conditions for the facility inlet to 2 decimal places for raw gas and sulphur inlets, and one decimal place for oil/bitumen, condensate, and water inlets. The total sulphur inlet rate entered for Category C, D, or E facilities must be greater than 0.00. If an inlet product is not applicable, enter 0.

Total Continuous Emissions Rates

Your answers should represent the total design amounts associated with all on-site equipment for the location identified (Section 5.9.7).

NO_x

Enter the total amount of NO_x emissions from all sources at the facility site in kilograms per hour (kg/h) to 2 decimal places. If less than 0.01 kg/h, enter 0.

CO_2

Enter the total amount of CO_2 emissions from all sources at the facility site in tones per day (t/d) to 2 decimal places. If less than 0.01 t/d, enter 0. For facilities operating a sweetening unit for the purpose of CO_2 removal, record the volume of CO_2 vented from that operation.

Flaring/Incineration

Enter the maximum continuous flaring/incineration rate in thousands of cubic metres per day ($10^3 m^3/d$) to 2 decimal places, including all sources on site where gas is burned in a flare or incinerator. You must enter 0.00 for facilities with no continuous flaring.

This value should include all sources of flash gas and/or tank vapour streams that are associated with continuous flaring/incineration during normal operations.

This value should not include fuel gas used for header purge, flare combustion management, or pilot fuel, volumes attributed to emergency or maintenance flaring, or volumes associated with sulphur recovery tail gas flaring/incineration.

Venting

Enter the maximum continuous venting rate in $10^3 m^3/d$ to 2 decimal places, including that from all sources on site where gas is vented. You must enter 0.00 for facilities with no continuous venting.

This value should not include volumes attributed to emergency or maintenance venting.

Step 6: Technical Information

*If you check a **BOLD** response, you must attach supporting information.*

1. The proposed facility is part of an experimental, primary, or commercial crude bitumen scheme.

YES means that the proposed facility is part of an approved experimental, primary, or commercial crude bitumen scheme.

NO means that the proposed facility is not part of an approved experimental, primary, or commercial crude bitumen scheme.

Surface facilities associated with an experimental, primary, or commercial crude bitumen scheme must have a scheme approval prior to the *Directive 056* application.

1a. If YES, Scheme Approval No.

Only complete this question if you answered YES to question 1 above.

If YES, enter the scheme approval number required in the space provided.

2. Equipment spacing requirements will be met. (Section 5.9.10)

YES means that the facility design and construction will meet the equipment spacing requirements detailed in the *Oil and Gas Conservation Regulations* (*OGC Regulations*), Part 8 (including proximity to a water body), and as required by *Directive 060*.

NO means that due to exceptional circumstances, all applicable requirements cited above have not been met in the facility design.

If **NO**, you must attach

- a detailed explanation of what equipment will not meet the requirements and why;
- a description of fluids involved and all sources of gaseous vapours;
- a topographic map (if terrain is the cause); and
- a description of how safety will not be compromised by a relaxation from the requirement, including a safety assessment and response time for call-out.

If **NO** and the spacing issue is facility equipment within 100 m from a water body, you must attach

- a discussion of the preventive measures that will be employed at the facility to minimize the risk of a spill occurring, and in the event of a spill, the preventive measures for ensuring that the spill does not reach the water body;
- a description of the proposed equipment, tanks, and piping that will be located less than 100 m from the water body and the fluids involved;
- a description of the types of automatic controls that will be installed (these devices should also be identified on the process flow diagram required for submission with all facility applications);
- a detailed survey plan that clearly identifies the facility location and the distance to the associated water body; and either

- the licensee's commitment to construct and maintain a berm around the perimeter of the equipment that will prevent any spill from reaching the water body. This berm should not be confused with the secondary containment requirements set out in *Directive 055*; or
- a description of an alternative method or operating condition that would demonstrate how the water body is protected.

Additionally, if the proposed facility site is located *within* a water body, the licensee must submit documentation confirming that AENV has no concerns about the development of the site

The ERCB will review the circumstances and decide if an exemption is warranted.

3. The facility will meet all current and applicable engineering and safety standards.

YES means that the facility is covered by the current engineering and safety standards and it will meet all applicable CSA, ASME, and ABSA requirements.

NO means that due to exceptional circumstances, all applicable engineering and safety requirements cited above have not been met in the facility design.

If **NO**, you must attach a detailed explanation of nonconformance with safety and engineering standards.

The ERCB will review the circumstances and decide if an exemption is warranted.

4. Gas will be continuously flared, incinerated, or vented. (Section 5.9.7)

YES means that gas produced at the facility will be continuously flared, incinerated, or vented under normal operating conditions.

NO means that the gas produced at the facility will be conserved or that this is a Category E facility.

4a. If YES, the gas flaring, incinerating, or venting will comply with the requirements of *Directive 060*.

Only complete this question if you answered YES to question 4 above.

YES means that the applicant intends to comply with performance standards defined in *Directive 060*, Sections 7 and 8, and has completed an economic evaluation of conserving the continuous flared, incinerated, or vented gas, as described in Section 2 of *Directive 060*.

NO means that you are requesting an exemption from *Directive 060* requirements and/or have not completed an economic evaluation of gas conservation.

If **NO**, you must attach

- a description of the exemption being proposing and a detailed explanation of reasons
- If you have not completed an evaluation of gas conservation, you must attach an explanation that includes plans to complete the evaluation when sufficient information is available.

The ERCB will review the circumstances and decide if an exemption is warranted.

5. The facility meets the ERCB *Noise Control* requirements (*Directive 038*). (Section 5.9.12)

YES means that a noise impact assessment has been conducted and used in site selection and facility design, and it indicates that the facility will operate within the guidelines in *Directive 038* or that there is no significant noise-generating equipment at this facility.

NO means that due to exceptional circumstances, all applicable requirements cited above have not been met.

If **NO**, you must attach

- the noise impact assessment,
- an explanation of why the noise requirements will not be met,
- a discussion of mitigative measures proposed or a discussion of why mitigative measures are not practical, and
- a map showing proximity of residents.

The ERCB will review the circumstances and decide if an exemption is warranted.

6. ERCB storage requirements will be met (*Directive 055*).

YES means that the facility design and operation will meet the storage requirements in *IL 84-11*, *IL 94-06*, and *Directive 055*. This also applies to sulphur-forming, storage, and transportation facilities that are part of the facility. YES also means that materials will not be stored at this facility or that the materials stored are exempt from *Directive 055* requirements.

NO means that due to exceptional circumstances, all applicable requirements cited above have not been met.

If **NO**, you must attach

- a detailed explanation of why the storage requirements will not be met, a description of alternative storage methods, and
- a discussion of how the environment will not be compromised by a relaxation of the requirements.

The ERCB will review the circumstances and decide if an exemption is warranted.

7. ERCB oilfield waste management requirements will be met (*Directive 058*).

YES means that an oilfield waste management plan will be developed and implemented to manage any wastes generated as a result of the facility's operations.

On-site waste management (one-time treatment or waste management component) is limited to first-party oilfield wastes generated inside the production system.

Facilities required for the disposal of Class 1a/1b fluids require approval under *Directive 058*.

Standalone surface facilities that dispose of Class II fluids only but maintain a Class 1a or 1b disposal scheme approval for the well require approval under *Directive 058*.

An oilfield waste management system requires approval as an oilfield waste management facility pursuant to the application requirements detailed in *Directive 058.*

The requirements for the management of oilfield wastes are detailed in *ID 96-03, Directive 058, ID 2000-04, ID 2000-03, ID 99-04, IL 99-02,* and *IL 98-02.*

8. ERCB production measurement requirements will be met.
(Section 5.9.13)

YES means that the facility design and operation will meet the production measurement standards detailed in *Directive 056,* Section 5.9.13 and Appendix 2, and in *Directive 060.*

NO means that due to exceptional circumstances, all applicable requirements cited above have not been met.

If **NO**, you must attach a detailed explanation of why measurement will not meet ERCB requirements and a discussion of the proposed alternative.

The ERCB will review the circumstances and decide if an exemption is warranted.

9. NO$_x$ air emissions meet the *Alberta Ambient Air Quality Objectives.*
(Sections 5.9.7 and 5.9.14)

YES means that NO$_x$ emissions will be within the *Alberta Ambient Air Quality Objectives* issued by AENV or that the facility has been registered with and/or approved by AENV.

NO means that due to exceptional circumstances, NO$_x$ emissions will not be within the *Alberta Ambient Air Quality Objectives.*

If **NO**, you must attach

- an explanation of why the *Alberta Ambient Air Quality Objectives* will not be met;
- documentation that confirms dispersion modeling was conducted in accordance with the Air Quality Model Guideline;
- the source parameters, locations, elevations and NO$_x$ emission rates for all sources;
- predicted maximum ground-level NO$_2$ concentrations;
- the name of the dispersion model that was used;
- description of meteorological data used; and
- terrain map of the study area.

The ERCB will review the circumstances and decide if an exemption is warranted.

10. Approval from or registration with AENV is required.

YES means that the facility requires approval from or registration with AENV under the *Environmental Protection and Enhancement Act* (*EPEA*) Activities Designation Regulation or the *Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants* and may require an application to AENV, or the licence amendment application does not require a change to the existing AENV approval or registration of the facility.

NO means that the facility is not regulated under *EPEA.*

11. AENV requires an environmental impact assessment.	YES means that the facility requires an environmental impact assessment (EIA) under *EPEA*. NO means that the facility does not require an EIA under *EPEA*. This information will help ERCB staff coordinate a joint notice, if required.
12. The proposed facility will include compressors (new licence only).	YES means that this application for a new facility licence includes gas compression. You must complete Schedule 2.4. A response is not required for licence amendment applications. NO means that this application for a new facility licence does not include gas compression.
13. The proposed facility will include pumps (new licence only).	YES means that this application for a new facility licence includes injection/disposal pumps. You must complete Schedule 2.4. A response is not required for licence amendment applications. NO means that this application for a new facility licence does not include injection/disposal pumps.
14. The proposed facility site requires *Historical Resources Act* clearance (Freehold land only). (Section 5.9.15)	YES means that the new facility lease or expanded facility lease (in the case of a licence amendment) requires clearance by Alberta Community Development, in accordance with the *Historical Resources Act*. NO means that the new facility lease or expanded facility lease (in the case of a licence amendment) does not require clearance by Alberta Community Development or that the facility is located on Crown land.
14a. If YES, Alberta Community Development has granted clearance for the facility site.	Only complete this question if you have answered YES to question 14. YES means that Alberta Community Development has granted clearance for the proposed facility site. **NO** means that Alberta Community Development has not granted clearance for the proposed facility site. If **NO**, you must attach a detailed explanation as to why Alberta Community Development has not provided clearance. The ERCB will review the circumstance and decide if an exemption is warranted.
15. The licensee is the only working interest participant (new licence only). (Section 5.9.16)	YES means that the licensee is the only working interest participant. A response is not required for licence amendment applications. NO means that the licensee is not the only working interest participant. If NO, you must complete Schedule 2.1, providing details on all working interest participants and the percentage ownership of each.

16. The proposed facility meets the ERCB environmental requirements.

YES means the proposed facility meets all applicable ERCB environmental requirements.

NO means the facility does not meet all applicable ERCB environmental requirements.

NO also means the facility is located within the Eastern Slopes (Southern Portion) as defined by *IL 93-09*.

If **NO**, you must attach a detailed explanation of why the facility does not meet ERCB environmental requirements and what measures will be in place to ensure that the facility will not have a negative impact on the environment.

If the facility is located within the area affected by *IL 93-09*, you must attach all material required by the IL.

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 2.1

Working Interest Participants—Facilities

DAY MONTH YEAR

APPLICANT'S REFERENCE

1. IDENTIFICATION

Applicant BA Code ______ Applicant Name ______

2. WORKING INTEREST PARTICIPANTS

BA Code	Company Name	Percentage
	Working interest participant percentage must total 100%	

5.14.2 How to Complete Schedule 2.1: Working Interest Participants—Facilities

Schedule 2.1 must be completed for each new Facility Licence Application submitted when you are not the 100 per cent (%) interest participant in the proposed facility.

Do not submit a Schedule 2.1 for licence amendment applications.

The applicant must be a working interest participant in the facility to apply for a facility licence.

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Identification

Applicant BA Code	Enter the 4-digit business associate (BA) code issued to your company.
Applicant Name	Enter the full corporate name of the applicant.

Step 2: Working Interest Participants

BA Code	Enter the 4-digit BA code issued to the working interest participant for each participating company, if available.
Company Name	Enter the full corporate name of each working interest participant, including the applicant's name.
Percentage (%)	Enter each participant's percentage of participation in the facility development. Working interest participation percentage must total 100%.

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 2.2

Gas Plants—Facilities

DAY MONTH YEAR

APPLICANT'S REFERENCE ______

1. IDENTIFICATION

Applicant BA Code ______ Applicant Name ______

2. TOTAL RECOVERED PRODUCTS

Sales Gas	C_2	C_3	C_4's
______ 10^3 m^3/d	______ m^3/d	______ m^3/d	______ m^3/d

C_5^+	C_2^+ mix	LPG mix	C_2 Component of C_2^+ mix
______ m^3/d	______ m^3/d	______ m^3/d	______ m^3/d

Sulphur	CO_2
______ t/d	______ 10^3 m^3/d

3. TECHNICAL INFORMATION

1. A sour gas proliferation review has been conducted in accordance with *ID 2001-03* .... YES ☐ **NO** ☐

2. The proposed facility is part of an approved acid gas injection scheme .... YES ☐ NO ☐

2a. If YES, Scheme Approval No. ______

3. The proposed facility will remove CO_2 from the inlet gas stream using a regenerative system .... YES ☐ NO ☐

5.14.3 How to Complete Schedule 2.2: Gas Plants—Facilities

A separate Schedule 2.2 must be completed for each Schedule 2 application for a Category B, C, D, or E gas plant.

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Identification

Applicant BA Code	Enter the 4-digit business associate (BA) code issued to your company.
Applicant Name	Enter the full corporate name of the applicant associated with the BA code.
Step 2: Total Recovered Products	Enter the maximum daily design rates for all applicable recovered and sales products to 2 decimal places.

Step 3: Technical Information

If you are applying for a Category C, D, or E gas plant, answer questions 1 and 2.

If you are applying for a Category B gas plant, answer question 3.

1. A sour gas proliferation review has been conducted in accordance with *ID 2001-03*.	YES means that a sour gas proliferation review for a new Category C, D, or E gas processing plant that meets the requirements of *ID 2001-03* was completed or that this is a licence amendment application. **NO** means that a sour gas proliferation review was not completed. If **NO**, you must attach a detailed explanation as to why the requirements cannot be met. The ERCB will review the circumstances and decide if an exemption is warranted.
2. The proposed facility is part of an approved acid gas injection scheme.	YES means that this facility is a Category C, D, or E gas processing plant that recovers an acid gas stream that is disposed to an approved underground formation. If YES, enter the scheme approval number required in question 2a. NO means that this facility is a Category C, D, or E gas processing plant that does not recover an acid gas stream that is disposed through subsurface injection.
2a. If YES, Scheme Approval No.	Only complete this if you answer Yes to question 2.
3. The proposed facility will remove CO_2 from the inlet gas stream using a regenerative system.	YES means that a regenerative sweetening process is in place exclusively for the removal of CO_2 from the gas stream. NO means that this facility is not removing CO_2 using a regenerative processing system.

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 2.3

H_2S Information—Facilities

DAY MONTH YEAR

APPLICANT'S REFERENCE ____________________

1. IDENTIFICATION

Applicant BA Code ________ Applicant Name ____________________

2. GAS TREATING AND PROCESSING INFORMATION

Sweetening Process ☐ Regenerative ☐ Nonregenerative ☐ None ☐ Both

Acid Gas Disposal Method ☐ Subsurface Injection ☐ Sulphur Recovery ☐ Flaring/Incineration ☐ CO_2 Venting ☐ **Other** (specify)____________________

Sulphur Recovery Process

☐ Claus
☐ Sulfreen
☐ FGD
☐ Selectox
☐ CBA
☐ MCRC
☐ Lo-Cat
☐ CrystaSulf
☐ Superclaus
☐ SCOT
☐ Shell-Paques
☐ **Other** (specify) ____________________

Acid Gas Volume	H_2S Content of Acid Gas
________ 10^3 m^3/d	________ mol/kmol

Maximum H_2S Content of Inlet Gas	Maximum Continuous Sulphur Emission Rate
________ mol/kmol	________ t/d

Sulphur Recovery Efficiency (quarterly-calendar)
________ %

3. TECHNICAL INFORMATION

1. Sour setback requirements have been met .... YES ☐ NO ☐
2. A method to recover vapours will be implemented .... YES ☐ NO ☐
3. SO_2 air emissions meet the *Alberta Ambient Air Quality Objectives* .... YES ☐ NO ☐

4a. Maximum calculated emergency planning zone .... ________ km

4b. Number of surface developments within the maximum calculated emergency planning zone .... ________

5.14.4 How to Complete Schedule 2.3: H_2S Information—Facilities

A separate Schedule 2.3 must be completed for each Schedule 2 application for a Category C, D, or E facility.

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Identification

Applicant BA Code	Enter the 4-digit business associate (BA) code issued to your company.
Applicant Name	Enter the full corporate name of the applicant associated with the BA code.

Step 2: Gas Treating and Processing Information

*If you check a **BOLD** response, you must attach supporting information.*

Sweetening Process

Check the appropriate box for the type of sweetening process used.

Check "None" if you are not treating or processing the inlet gas for H_2S removal.

Check "Both" if you are using both regenerative and nonregenerative sweetening processes at the facility.

If you select Regenerative, you must complete Schedule 2.2.

Acid Gas Disposal Method

If the facility uses a regenerative sweetening process, check the appropriate boxes for all processes used.

If you check "Subsurface Injection," you must answer questions 2 and 2a on Schedule 2.2.

If you check "**Other**," you must attach a description of the alternative process and supporting technical documents/papers discussing the method.

The ERCB will review the circumstances and decide if an exemption is warranted.

Sulphur Recovery Process (Section 5.9.5)

For Category E applications, check the appropriate boxes for all processes used.

If you select "**Other**," you must attach

- a description of the proposed process, including a supporting process flow diagram, and material balance;
- technical documents/papers discussing the process;
- an explanation of how the proposed process will meet the sulphur recovery requirements;
- available correspondence from Alberta Environment related to the process; and

- the results/description of the process in operation at another facility.

The ERCB will review the circumstances and decide if an exemption is warranted.

Acid Gas Volume
(Regenerative sweetening only)

If the facility uses a regenerative sweetening process, enter the maximum daily design rate of acid gas (H_2S and CO_2) removed from the sour gas inlet stream in thousands of cubic metres per day ($10^3 m^3/d$) to 2 decimal places.

H_2S Content of Acid Gas
(Regenerative sweetening only)

If the facility uses a regenerative sweetening process, enter the H_2S content of the acid gas stream in moles per kilomole (mol/kmol) to 2 decimal places.

Maximum H_2S Content of Inlet Gas

For all Category C, D, and E facility applications, enter the maximum H_2S content of the raw inlet gas in mol/kmol to 2 decimal places.

For facilities with multiple inlet streams, enter the H_2S value from the inlet stream with the highest H_2S content.

Maximum Continuous Sulphur Emission Rate

Enter the maximum continuous sulphur emission rate on a sulphur-equivalent basis in tonnes per day (t/d) to 2 decimal places.

This number should represent the sum of the sulphur content of the tail gas emission from a sulphur recovery process, continuous acid gas flaring/incineration, emissions from produced water tanks, and continuous or routine flaring/incineration of gas containing H_2S.

This number does not include sulphur emissions from infrequent emergency or maintenance flaring/incineration.

Sulphur Recovery Efficiency (quarterly-calendar)

For all E Category gas processing plants, enter the minimum sulphur recovery efficiency percentage (%) determined on a calendar quarter-year average basis to 1 decimal place.

For all D Category gas processing plants where subsurface injection has been selected in Step 2, enter the equivilant sulphur recovery efficiency, consistent with the approved sulphur inlet and Table 1 from *ID 2001-03*.

The sulphur recovery efficiency must meet the requirements of *ID 2001-03*.

Step 3: Technical Information

1. Sour setback requirements have been met.
(Section 5.9.9)

YES means that this is a Category C, D, or E facility and the setback requirements outlined in Table 5.6 have been met.

YES also means that there are no setbacks imposed by pipelines designated as sour level associated with this facility.

NO means that the facility is a Category C, D, or E facility, but due to exceptional circumstances, it does not meet the setback requirements.

If **NO**, you must attach a detailed explanation as to why the requirements cannot be met.

The ERCB will review the circumstances and decide if an exemption is warranted.

2. A method to recover vapours will be implemented.
(Section 5.9.11)

YES means that you will be implementing a method to recover stock tank vapours, as required by the *OGC Regulations*, Section 7.070, and that a method to contain vapours during the transfer and transport of fluids containing more than 0.01 mol/kmol H_2S will be implemented.

YES may also mean, that the facility does not require a vapour recovery system.

For licence amendment applications, YES means that a vapour recovery system already exists.

NO means that due to exceptional circumstances, all applicable requirements cited above have not been met.

If **NO**, you must attach a detailed explanation of why a vapour recovery unit will not be installed and a discussion of mitigative measures to ensure that off-lease odours do not occur.

The ERCB will review the circumstances and decide if an exemption is warranted.

3. SO_2 air emissions meet the *Alberta Ambient Air Quality Objectives.*
(Section 5.9.7 and Section 5.9.14)

YES means that SO_2 emissions will be within the *Alberta Ambient Air Quality Objectives* issued by AENV, as predicted by dispersion modelling, or that the facility emissions have been approved by AENV.

NO means that due to exceptional circumstances, SO_2 emissions will not be within the *Alberta Ambient Air Quality Objectives.*

If **NO**, for SO_2 exceedances you must attach

- a schematic diagram or description of the flare stack;
- the source parameters, locations, elevations, and SO_2 emission rates for all sources;
- predicted maximum ground-level SO_2 concentrations;
- the name of the dispersion model used;
- a description of the meteorological data used;
- a terrain map of the study area;
- for facilities with less than 10 mol/kmol H_2S, the heating value of the gas stream for the flare/incinerator; and
- a description of the magnitude and frequency of potential SO_2 exceedances, and information on situations leading to SO_2 exceedances (e.g., operational scenarios, meteorological conditions).

The ERCB will review the circumstances and decide if an exemption is warranted.

4a. Maximum calculated emergency planning zone

Enter the maximum calculated emergency planning zone radius in km to 2 decimal places, as determined by the requirements of *Directive 071.*

4b. Number of surface developments within the maximum calculated emergency planning zone	Enter the total number of surface developments located within the maximum calculated emergency planning zone.

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 2.4

Compressors/Pumps—Facilities

DAY	MONTH	YEAR

APPLICANT'S REFERENCE ______________________

1. IDENTIFICATION

Applicant BA Code ________ Applicant Name ______________________________

2. COMPRESSORS

Install (I) Remove (R)	Compressor Rating	Compressor Driver Power Source		NO_x Emission Rating
		Gas	Electric	
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh

Total Number of Gas Compressors on Site	Total Number of Electric Compressors on Site	Total on-Site Compressor Wattage
________	________	______________ kW

3. PUMPS

Install (I) Remove (R)	Pump Rating	Pump Driver Power Source		No_x Emission Rating
		Gas	Electric	
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh
	________ kW	☐	☐	________ g/kWh

Total Number of Gas Pumps on Site	Total Number of Electric Pumps on Site	Total on-Site Pump Wattage
________	________	______________ kW

4. TECHNICAL INFORMATION

1a. Night-time permissible sound level (PSL) at the nearest or most impacted residence ______________ dBa.

1b. Predicted overall sound level at the nearest or most impacted residence ______________ dBa.

5.14.5 How to Complete Schedule 2.4: Compressors/Pumps—Facilities

You are not required to complete Schedule 2.4 unless your facility application includes the installation and/or removal of compressors and/or pumps.

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Identification

Applicant BA Code	Enter the 4-digit business associate (BA) code issued to your company.
Applicant Name	Enter the full corporate name of the applicant associated with the BA code.

Step 2: Compressors

Complete this step if you are installing and/or removing upstream compression at a new or existing site. The removal of compression is not a mandatory application submission but will be processed at the applicant's request (Section 5.9.8).

Install/Remove	Enter "I" if you are applying to install a compressor. Enter "R" if you are applying to remove a compressor.
Compressor Rating	Enter the kilowatt (kW) rating of each unit proposed for installation and/or removal at this facility.
Compressor Driver Power Source	Check the appropriate driver source for each unit proposed for installation and/or removal at this facility.
NO_x Emission Rating	Enter the manufacturer's rating for NO_x emissions in grams of NO_x per kilowatt hour (g/kWh) for each natural gas compressor unit proposed for installation and/or removal at this facility. Enter 0 for electric-driven compressors.
Total Number of Gas Compressors on Site	Enter the total number of natural gas-driven compressors located at the facility, including any new units being added by this application.
Total Number of Electric Compressors on Site	Enter the total number of electric-driven compressors located at the facility, including any new units being added by this application.
Total on-Site Compressor Wattage	Enter the sum of the compressor wattage for the entire facility operations in kilowatts (kW). The total must include any new units being added by this application.

Step 3: Pumps

Complete this step if you are installing and/or removing upstream disposal/injection pumps at a new or existing site. The removal of injection/disposal pumps is not a mandatory application submission but will be processed at the applicant's request (Section 5.9.8).

Install/Remove	Enter "I" if you are applying to install an injection/disposal pump. Enter "R" if you are applying to remove an injection/disposal pump.
Pump Rating	Enter the kilowatt (kW) rating of each unit proposed for installation and/or removal at this facility.
Pump Driver Power Source	Check the appropriate driver source for each unit proposed for installation and/or removal at this facility.
NO_x Emission Rating	Enter the manufacturer's rating for NO_x emissions in grams of NO_x per kilowatt hour (g/kWh) for each natural gas injection/disposal pump proposed for installation and/or removal at this facility. Enter 0 for electric-driven pumps.
Total Number of Gas Pumps on Site	Enter the total number of natural gas-driven injection/disposal pumps located at the facility, including any new units being added by this application.
Total Number of Electric Pumps on Site	Enter the total number of electric-driven injection/disposal pumps located at the facility, including any new units being added by this application.
Total on-Site Pump Wattage	Enter the sum of the pump wattage for the entire facility operations in kilowatts (kW). The total must include any new units being added by this application.

Step 4: Technical Information

Provide the following information based on the Noise Impact Assessment, required by Directive 038, *conducted for this facility.*

1a. Night-time permissible sound level (PSL) at the nearest or most impacted residence (*Directive 038*)	Enter the night-time permissible sound level (PSL) at the nearest or most impacted residence in decibels absolute (dBa) to 2 decimal places. For remote locations, a distance of 1500 m may be used to determine the facility PSL if there are no residences within that radius.
1b. Predicted overall sound level at the nearest or most impacted residence (*Directive 038*)	Enter the predicted overall sound level at the nearest or most impacted residence in dBa to 2 decimal places. This value may be based on distance of 1500 m if there are no residences within that radius.

Section 6 Pipeline Licence Applications (Schedule 3)

6.1 Overview

An applicant must use Schedule 3 when applying to

- construct and operate a new pipeline that requires a new pipeline licence;
- construct and operate a new pipeline that is to be added to an existing pipeline licence;
- construct and operate a permanent pipeline, regardless of length, which is not contained wholly within the boundary of a surface facility lease or an adjoining surface facility lease;
- construct and operate a permanent or temporary surface pipeline, except for pipelines that will be in continuous use for less than 21 consecutive days for the purpose of well testing (consent is obtained from the local ERCB Field Centre; see Appendix 5);
- change the operating parameters of an existing pipeline; or
- construct a pipeline installation that includes a
  - compressor station or pump station (in continuous use for more than 21 days) associated with pipelines carrying processed (sales) product located downstream of a facility,
  - tank farm,
  - pipeline oil loading and unloading facility, or
  - pipeline line heater (Category C and D).

Directive 026: Setback Requirements for Oil Effluent Pipelines introduces setback requirements for oil effluent pipelines containing greater than 10 mol/kmol of H_2S. The requirements set out in *Directive 026* must be met when filing a *Directive 056* pipeline licence application for new construction of any pipeline containing greater than 10 mol/kmol H_2S.

Schedule 3 is also used to notify the ERCB of a pipeline abandonment and pipeline discontinuation.

The applicant must use a separate Schedule 3 for each pipeline licence involved in the project. The applicant may apply for a number of different additions and amendments to the same licence on one Schedule 3. The only exception is a licence amendment for a substance change (see Section 6.9.17 for details).

Gas utility pipelines and any associated pipeline installations are not under the jurisdiction of the ERCB. Applicants seeking to acquire or amend a licence for a gas utility pipeline or associated pipeline installation should contact the Alberta Utilities Commission (AUC) for direction on how to proceed. Refer to *Bulletin 2007-46: Gas Utility Pipelines Under the Jurisdiction of the Alberta Utilities Commission* for further information regarding the change in jurisdiction.

6.2 Project Submissions

A project is defined as a network of facilities, pipelines, and/or wells that connect to a common facility. A project submission may consist of the consecutive submissions of related single licence applications or the single submission of multiple licence applications of related facilities, pipelines, and wells. The ERCB encourages applicants to identify related applications that are part of the same project through the use of a common reference number in the Applicant's Reference section.

Numbered statements represent requirements and expectations (see Section 1.4).

1) If the applicant is filing an application for a project submission:
   a) the project must be submitted under one company name using one Schedule 1, and
   b) the applicant must complete a separate Schedule 3 for each pipeline licence in the project.

6.3 Licences

Applications submitted under *Directive 056* are for a licence to construct and operate a pipeline. For administrative purposes, the pipeline status "to be constructed" automatically changes to an "operating" status one year from the date the licence was issued.

6.3.1 Licence Expiry

New pipeline licences and amendments expire one year from the date of issue if right-of-way clearing, construction, or operation is not yet started.

2) The applicant must submit a licence amendment at least 30 days prior to the licence expiry date informing the ERCB that a pipeline will not be constructed.
3) If an applicant intends to proceed with a project for which a licence has expired, it must fulfill all applicable regulatory requirements, including participant involvement requirements, before filing a new application (also see Section 2).

Due to the complexity of some developments, it is possible the applicant may not be able to act on a licence before the expiry date. If licence expiry is imminent, the applicant should contact ERCB Facilities Applications for advice on how best to proceed.

4) Prior to initiating new construction when a licence is nearing licence expiry, the applicant must conduct a new resident/landowner search and determine if any new issues have arisen since the licence was granted.
5) If a pipeline licence has expired and construction has not commenced, the applicant must advise Facilities Applications by submitting a self-declaration application. The applicant should contact Facilities Applications for further direction on how to proceed.
6) If an applicant does not intend to proceed with the licence, it must notify Facilities Applications.

6.4 Category Type and Consultation and Notification Requirements

The types of pipelines requiring a licence under *Directive 056* are listed in Table 6.1, along with their respective consultation and notification requirements. The category type of a pipeline is dependent on the pipe diameter and H_2S content of the transported product.

7) The applicant must identify the correct category type for the proposed pipeline and perform all associated consultations and notifications.

Pipeline activities requiring licence amendments under *Directive 056* are listed in Table 6.2, along with their respective notification requirements.

8) If an outstanding concern/objection is received during the notification process for the pipeline activities of Table 6.2, the applicant must file a nonroutine application prior to commencing any of these activities.

6.5 Exemptions

9) Although no application is required under *Directive 056* for the following pipelines and activities, the company must provide a project-specific information package to any landowners, occupants, and residents that may be directly and adversely affected by the activity.

   If a concern/objection to the proposal is received and remains unresolved, the ERCB may require that a nonroutine application be submitted.

   Although applications are not required under *Directive 056*, the company must meet all applicable regulatory requirements. If the company is unable to meet all the regulatory requirements, it must obtain a waiver from the requirement from the appropriate ERCB group.

6.5.1 Pipeline Installations

The licensing of the following pipeline installations does not occur under *Directive 056*:

- loading racks,
- meter stations,
- regulator stations,
- a temporary pipeline installation that will be in continuous use for less than 21 consecutive days for the purpose of well testing (consent for temporary pipeline installations is obtained from the local ERCB Field Centre), and
- line heaters associated with Category B pipelines.

Table 6.1. Pipeline category type and consultation and notification requirements

Category	Name	Type	Description	Personal consultation and Confirmation of nonobjection	Notification
B, C, D	Records correction	000	All		
B	Pipelines, gas ≤ 0.30 kPa H_2S partial pressure (pp)	100	Natural gas ≤ 323.9 mm OD	• Landowners and occupants of the right-of-way	• Crown disposition holders • Local authorities along the right-of-way • Urban authorities within 1.5 km • For Category Type B101, B111 and B121, landowners and occupants within 0.2 km
		101	Natural gas > 323.9 mm OD		
	Pipelines, oil effluent ≤ 0.30 kPa H_2S pp or effective pp[*]	110	Oil effluent ≤ 323.9 mm OD		
		111	Oil effluent > 323.9 mm OD		
	Pipelines, other (gas-free)	120	Other ≤ 323.9 mm OD		
		121	Other > 323.9 mm OD		
	Pipeline downstream facilities	130	Pipeline tank farm	• Landowner and occupants • Residents within 0.5 km	• Crown disposition holders • Local authorities • Landowners, occupants and urban authorities within 1.5 km
		131	Pipeline oil loading or unloading terminal		
		132	Compressor station		
		133	Pump station		
C	Pipelines, gas > 0.30 kPa H_2S pp but ≤ 10 mol/kmol	380	Sour service natural gas ≤ 323.9 mm OD	• Landowners and occupants of the right-of-way	• Crown disposition holders • Local authorities along the right-of-way • Urban authorities within 1.5 km • For Category Type C381 and C383, landowners and occupants within 0.2 km
		381	Sour service natural gas > 323.9 mm OD		
	Pipelines, oil effluent > 0.30 kPa H_2S pp or effective pp[*]	382	Sour service oil effluent ≤ 323.9 mm OD		
		383	Sour service oil effluent > 323.9 mm OD		
	Pipeline upstream facilities	384	Pipeline line heater	• Landowner and occupants	• Crown disposition holders
D	Pipelines, gas > 10 mol/kmol H_2S	452	Level 1 natural gas ≤ 323.9 mm OD	• Landowners and occupants of the right-of-way	• Crown disposition holders • Local authorities along the right-of-way • Landowners, occupants and residents within 0.5 km • Urban authorities within 1.5 km (continued)
		453	Level 1 natural gas > 323.9 mm OD		

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[*] A release volume must be calculated for all oil effluent pipelines containing greater than 10 mol/kmol H_2S. Applications for these pipelines must meet the personal consultation/confirmation of nonobjection and notification requirements for Category D pipelines based on the level designation of the pipeline proposed (as defined by Table 6.3).

Table 6.1. Pipeline Category Type and Consultation and Notification Requirements (concluded)

Category	Name	Type	Description	Personal consultation and Confirmation of nonobjection	Notification
D	Pipelines, gas > 10 mol/kmol H_2S	454	Level 2 natural gas ≤ 323.9 mm OD	• Landowners and occupants of the right-of-way and within 0.1 km setback	• Crown disposition holders • Local authorities along the right-of-way • Landowners, occupants, and residents within 0.5 km • Urban authorities within 2.0 km
		455	Level 2 natural gas > 323.9 mm OD		
		461	Level 3 natural gas ≤ 323.9 mm OD	• Landowners and occupants of the right-of-way and within 0.1 km setback	• Crown disposition holders • Local authorities along the right-of-way • Landowners, occupants, and residents within 1.5 km • Urban authorities within 3.0 km
		462	Level 3 natural gas > 323.9 mm OD		
		463	Level 4 natural gas ≤ 323.9 mm OD	• Landowners and occupants of the right-of- way and within 0.1 km setback	• Same as Level 3 unless otherwise specified by ERCB
		464	Level 4 natural gas > 323.9 mm OD		
	HVP pipelines	530	HVP pipelines	• Landowners and occupants of the right-of-way	• Crown disposition holders • Local authorities along the right-of-way • Landowners, occupants, and residents within 0.2 km • Urban authorities within 1.5 km
	Pipeline upstream facilities	531	Pipeline line heater	• Landowners and occupants	• Crown disposition holders

Table 6.2. Licence amendment requirements for pipeline/pipeline installation activities

Activity	Participant Involvement	Application
Complete removal (including all crossings)	Notification must occur prior to the filing of an application and the removal operation and must include • landowners and occupants of the entire pipeline right-of-way and within the associated setbacks, and • residents within the distances specified in Table 6.1 for Category D pipelines.	Application deemed nonroutine; licence must be obtained before commencing the removal operation.
Not constructed	Notification must be provided to • landowners and occupants of the entire pipeline right-of-way and within the associated setbacks, and • residents within the distances specified in Table 6.1 for Category D pipelines.	Application is filed routine 30 days prior to expiry of pipeline licence.
Abandonment or partial removal	Notification must occur prior to the abandonment or partial removal operation and must include • landowners and occupants of the entire pipeline right-of-way and within the associated setbacks, and • residents within the distances specified in Table 6.1 for Category D pipelines.	Application is filed within 90 days of completing the abandonment operation to advise the ERCB of the abandonment. Licence must be obtained before commencing removal operations.
Discontinuation	Notification is not mandatory for discontinuations.	Application is filed within 90 days of completing the discontinuation operation to advise the ERCB of the discontinuation.
H_2S change, MOP change, substance change, flow reversal, line split	Notification is not mandatory for these activities. If any of these activities result in the pipeline changing to a Category D or the setbacks increase, personal consultation with nonobjection and notification must occur prior to the filing of an application and commencing operations. This must include • landowners and occupants of the entire pipeline right-of-way and within the associated setbacks, and • residents within the distances specified in Table 6.1 for Category D pipelines. If any of these activities result in a setback decrease or the setback no longer exists, notification must occur with landowners and occupants of the entire pipeline right-of-way and within the associated setbacks.	Licence must be obtained prior to commencing operations.
Resumption of discontinued pipeline	Notification is not mandatory for resumption of a discontinued pipeline. If other activities are conducted in conjunction with the resumption that result in the pipeline changing to a Category D or the setbacks increase, personal consultation with nonobjection and notification is required prior to filing of application and commencing operation. This must include • landowners and occupants of the entire pipeline right-of-way and within the associated setbacks, and • residents within the distances specified in Table 6.1 for Category D pipelines.	Licence must be obtained before commencing resumption operations.
Resumption of abandoned pipeline/pipeline installations	Personal consultation with confirmation of nonobjection and notification must occur prior to the filing of application and resumption of operation and must include • landowners and occupants of the entire pipeline right-of-way and within the associated setbacks, and • residents within the distances specified in Table 6.1 for Category D pipelines.	Application deemed nonroutine; licence must be obtained before commencing operations (comprehensive engineering assessment required).
Liner installation	Notification is not mandatory for liner installations.	Licence must be obtained prior to commencing liner installation.

6.5.2 Pipeline Activities

The licensing of the following pipelines and activities is not required under *Directive 056*:

- a utility cooperative pipeline operated at a maximum operating pressure (MOP) of 700 kPa or less (Alberta Agriculture, Food and Rural Development),
- a pipeline replacement if each individual section is less than 100 m long and
  - the replaced pipe is removed,
  - the work is carried out within the existing right-of-way, and
  - the replacement sections are identical, of the same material, or evaluated as being equivalent for the licensed purpose and operating conditions,
- the pipeline or tie-in is wholly within a single surface lease boundary or is wholly within adjacent or abutting facility surface leases (*Pipeline Regulation*, Section 1 (1)m and 1(4)), and
- Category B, C, and D surface pipelines that will be in continuous use for less than 21 consecutive days for the purpose of well testing (consent for surface pipeline is obtained from the local ERCB Field Centre; see Appendix 5).

6.6 Records Correction

Applications to correct licence records should follow the self-disclosure process (see Section 3.9) for licence amendments, using "other" for the licence amendment type.

6.7 Licence Amendments

10) Applicants must follow the requirements set out in *Directive 026* when making an application to amend an oil effluent pipeline with greater than 10 mol/kmol H_2S content.

11) The licensee must submit a pipeline licence amendment application for

    a) MOP changes,

    b) H_2S changes,

    c) change of substance,

    d) liner installation,

    e) resumption,

    f) discontinuation,

    g) abandonment/partial removals,

    h) removal,

    i) line split,

    j) flow reversal, and

    k) a pipeline that is not constructed.

6.7.1 Pipeline Applications—Checklist for Minimum Technical Requirements

Additional technical evaluation should be considered when the following pipeline activities are proposed: a pipeline resumption, MOP increase, substance change, liner installation, or composite pipeline installation. The Pipeline Applications Checklist for Minimum Technical Requirements, found on the *Directive 056* Web page, should be used as a reference document. It describes the type of information that should be submitted with a nonroutine application.

Section 6.9 provides discussion of the technical criteria for all pipeline applications.

6.8 Participant Involvement Requirements

12) The applicant must ensure that the requirements set out in Section 2 are met for the radius set out in Table 6.1 and Table 6.2.
13) The applicant must meet the information requirements as part of personal consultation and notification for all pipeline licence applications (Section 2).
14) The applicant must provide information packages to those persons whose rights may be directly and adversely affected, as set out in Table 6.1 and Table 6.2, and be prepared to discuss the project as necessary.
    a) If personal consultation is required, the applicant must
        i) provide a written project-specific information package, which must meet the minimum information requirements described in Section 2 and include any other information to assist in understanding the proposed development;
        ii) provide the letter from the Chairman of the ERCB;
        iii) provide the ERCB brochure *Understanding Oil and Gas Development in Alberta*;
        iv) provide the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*; and
        v) offer the EnerFAQs listed in Appendix 11.
    b) If notification is required, the applicant must provide the applicant's project-specific information package and the letter from the Chairman of the ERCB and offer copies of
        i) the ERCB brochure *Understanding Oil and Gas Development in Alberta*;
        ii) the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*; and
        iii) the EnerFAQs listed in Appendix 11.
15) The applicant must indicate any outstanding concerns/objections by checking the appropriate bold response on Schedule 3 to indicate a nonroutine application.
    a) The applicant must also include a written summary of the outstanding issues for ERCB review and consideration (Section 3.4), including a discussion as to how the applicant intends to mitigate the issues raised.
    b) The applicant and the objector are expected to consider using the ERCB's Appropriate Dispute Resolution (ADR) program to mitigate outstanding concerns/objections (Section 2).

16) The ERCB does not prescribe the geographical area the applicant must investigate for industry notification. However, the applicant is expected to discuss the proposal with licensees of similar pipelines that may potentially be directly and adversely affected by the application.

    a) The applicant is expected to provide interested or potentially directly and adversely affected oil and gas reserve owners and licensees with a written overview of the proposed pipeline. The onus is then on these parties to raise any concerns/objections to the proposal. The ERCB expects this contact to precede public consultation and notification.

17) The ERCB does not require applicants to acquire crossing agreements prior to submitting an application. However, they must be in place prior to construction.

18) Applicants must meet the requirements in Section 8.3 when planning sour gas activity where residents are located within the EPZ.

19) Applications for oil effluent pipelines containing greater than 10 mol/kmol H_2S must meet the participant involvement requirements for Category D pipelines based on the level designation of the pipeline proposed (as defined by Table 6.3) regardless of the applied-for category/type of pipeline.

20) In cases of pipeline abandonment and discontinuation where no *Directive 056* licence is required to conduct the operation but the ERCB must be notified of its occurrence, applicants must advise Facilities Applications if any concerns/objections to the abandonment procedure are received.

6.9 Technical Requirements

The following are subsections under pipeline technical requirements and discuss various fields on Schedules 3 and 3.1.

6.9.1 Emergency Response Planning

The emergency planning zone (EPZ) for pipelines containing H_2S in the gas phase and operating at pipeline licence conditions is based on the release volume from the pipeline. An EPZ is also calculated for a high vapour pressure (HVP) pipeline. An emergency response plan (ERP) is required when a surface development (e.g., occupied dwelling, campground) is located within the EPZ. ERPs should be forwarded directly to ERCB Emergency Planning and Assessment Section for review. See *Directive 071* for further details on emergency response planning.

21) All licensees must have a corporate-level ERP that addresses the fundamentals of how an emergency situation would be handled.

22) The applicant must ensure that the ERP has been approved by ERCB Emergency Planning and Assessment Section prior to commencement of operations.

6.9.2 Setback Requirements

There are specific setback distances between pipelines containing gas > 10 mol/kmol H_2S and permanent dwellings, unrestricted country developments, urban centres, or public facilities.

23) The applicant must meet the applicable setback requirements in Table 6.3 based on the calculated H_2S release volume for the proposed pipeline.

Table 6.3. Setback requirements for gas/oil effluent pipelines containing >10 mol/kmol H_2S

Level	H_2S Release Volume (m^3)	Minimum Distance
1	< 300	Pipeline right-of-way
2	≥ 300 to < 2000	0.1 km to individual permanent dwellings and unrestricted country developments 0.5 km to urban centres or public facilities
3	≥ 2000 to < 6000	0.1 km to individual permanent dwellings up to 8 dwellings per quarter section 0.5 km to unrestricted country developments 1.5 km to urban centres or public facilities
4	≥ 6000	As specified by the ERCB but not less than Level 3

6.9.3 Pipeline Leak Detection

24) The licensee must meet leak detection requirements for liquid hydrocarbon pipelines as described in Annex E of CSA Z662.

CSA Z662, Clause 10, has requirements for leak detection for liquid hydrocarbon, gas, and oilfield water pipelines; however, the additional leak detection requirements contained in Annex E of CSA Z662 are mandatory only for liquid hydrocarbon pipelines. Refer to the *Pipeline Regulation*, Section 9.

6.9.4 Steam Distribution Pipelines

Steam distribution pipelines are considered to form part of a "pressure piping system" under the *Alberta Boilers Safety Codes Act*.

25) Prior to the submission of a licence application, the design of steam distribution pipelines must satisfy the requirements of CSA Z662 and be registered with the *Alberta Boilers Safety Association*.

6.9.5 Pipeline Discontinuation

Pipeline discontinuation is defined as the temporary deactivation of a pipeline or part of a pipeline.

26) An application is not required for pipeline discontinuation; however, for the purpose of updating ERCB records, the applicant must notify Facilities Applications by submitting a licence amendment application within 90 days of completion of the pipeline discontinuation.

Industry and public notification is not mandatory for discontinuations (see Table 6.2).

27) When discontinuing a pipeline, the licensee must ensure that
    a) proper discontinuation procedures are in place (see *Pipeline Regulation*, Section 82),
    b) cathodic protection will be maintained in working condition and monitored in accordance with the *Pipeline Regulation*, Section 53, and
    c) setback distances are retained (Table 6.3).

6.9.6 Pipeline Abandonment

Pipeline abandonment is defined as the permanent deactivation of a pipeline in a manner prescribed by the *Pipeline Regulation*; this includes any measures required to ensure that the pipeline is left in a permanently safe and secure condition. This also includes the removal of related surface equipment no longer in use, including pig traps, risers, block valves, and line heaters, unless they are located within the boundaries of a facility that will continue to have other licensed equipment operating after the pipeline abandonment.

28) When abandoning a pipeline, the licensee must

  a) conduct notification with potentially directly and adversely affected parties along the entire pipeline right-of-way and those affected by setbacks prior to any abandonment procedures (see Table 6.2);

  b) ensure that proper abandonment procedures are in place (see *Pipeline Regulation*, Section 82); and

  c) submit a licence amendment application notifying Facilities Applications of the abandonment within 90 days of the pipeline abandonment.

6.9.7 Partial Pipeline Removals

The physical removal of a pipeline where crossings are not being removed is considered a partial removal.

29) When applying for a partial pipeline removal and prior to undertaking any activity, the licensee must

  a) conduct notification with potentially directly and adversely affected parties along the pipeline right-of-way and associated setbacks (see Table 6.2),

  b) submit a routine licence amendment application to ERCB Facilities Applications to abandon the pipeline, and

  c) obtain licence prior to commencing removal operations.

6.9.8 Pipeline Resumption

Pipeline resumption is defined as resuming operations on a discontinued pipeline or on a pipeline that has not been in active flowing service within the last 12 months to its original licensed parameters. Abandoned pipelines are not normally candidates for resumption of operation. In rare and exceptional circumstances, a licence may be granted to resume operation of an abandoned pipeline if the applicant has supported the request with a comprehensive engineering assessment.

30) When resuming operation of a discontinued pipeline, the licensee must ensure that

  a) cathodic protection was maintained in accordance with CSA Z662,

  b) there is suitable external/internal coating integrity, and

  c) sour service requirements are met, if applicable.

31) The licensee must conduct personal consultation and notification if the resumption of the discontinued pipeline in conjunction with other activities results in a change to a Category D pipeline (see Table 6.2).

32) When resuming operation of an abandoned pipeline, the licensee must file a nonroutine application and demonstrate

    a) compliance with personal consultation, confirmation of nonobjection, and notification requirements for all potentially directly and adversely affected parties along the entire pipeline right-of-way and those affected by setbacks (see Table 6.2),

    b) the integrity of the pipeline and the external/internal coating,

    c) that sour service requirements of the 2007 version of CSA Z662 are met, if applicable, and

    d) that a comprehensive engineering assessment supports the resumption.

6.9.9 Pipeline Removal

Pipeline removal is defined as the removal of the entire pipeline, including crossings of roads, railways, and watercourses. These applications are deemed nonroutine by the ERCB. The physical removal of a portion of a pipeline is also addressed by filing a pipeline abandonment application (Section 6.9.6).

33) When applying to remove a pipeline and prior to undertaking any activity, the licensee must

    a) conduct notification with potentially directly and adversely affected parties along the pipeline right-of-way and associated setbacks (see Table 6.2), and

    b) submit a licence amendment application to ERCB Facilities Applications as a nonroutine licence application.

6.9.10 Pipeline Replacement

Pipeline replacement is defined as the replacement of an existing pipeline or a pipeline segment. An application is not required for a pipeline replacement if each individual section is less than 100 m long and

- the replaced pipe is removed,
- the work is carried out within the existing right-of-way, and
- the replacement sections are identical, of the same material, or evaluated as being equivalent for the licensed purpose and operating conditions.

6.9.11 Surface Pipelines

Category B, C, and D surface pipelines that are in continuous use for less than 21 days for "well testing purposes" do not require a *Directive 056* pipeline licence application.

A *Directive 056* pipeline application is required for

- Category B, C, and D surface pipelines that are in use for less than 21 days for "purposes other than well testing," and

- all surface pipelines in continuous use for more than 21 consecutive days.

34) If all routine application requirements are met, Category B surface pipelines for "purposes other than well testing" may be submitted as a routine *Directive 056* application.

A *Directive 056* pipeline application is not required for Category B, C, and D surface pipelines in continuous service for less than 21 days for well testing purposes; however, the applicant must obtain

a) landowner consent, and

b) local ERCB Field Centre (Appendix 5) consent to install and operate a surface pipeline for less than 21 days.

35) The applicant must meet all requirements of CSA Z662 and the *Pipeline Regulation*.

a) For Category B surface pipelines, J55 API tubing and threaded joints may be used in some situations. Such applications must be submitted to ERCB Facilities Applications as a nonroutine application.

36) The applicant must submit a nonroutine application for all Category C and D surface pipelines for purposes other than well testing. The application may be submitted nonroutine by checking "No" to question 3 in Section 7 on Schedule 3. The applicant must provide the following information with the application:

a) supporting documentation to address surface pipeline requirements, in accordance with *Pipeline Regulation*, Section 21;

b) a detailed explanation of the pipeline design that includes consideration of the downstream pipeline effects and compatibility with connections pipelines;

c) a description of the measures taken to protect the surface pipeline from third-party damage;

d) information of the corrosion control, monitoring program, and mitigation measures for the proposed surface pipeline, including an assessment of any impacts that adding and later removing the flow may have on the flow regimen of the connecting pipelines; and

e) an explanation detailing the need for the surface pipeline.

6.9.12 Calgary and Edmonton Transportation/Utility Corridors

37) Ministerial consent from Alberta Infrastructure must be obtained prior to any government authority ordering or authorizing any operation or activity that causes a surface disturbance in the Transportation/Utility Corridors.

a) The applicant must obtain consent from Alberta Infrastructure prior to submitting an application to ERCB Facilities Applications.

6.9.13 Line Splits

A line split occurs when one line segment is split into multiple line segments that are each assigned an individual line number.

38) The licensee must file a licence amendment application prior to splitting a line.

6.9.14 Base Plan Maps

The ERCB uses pipeline base maps to show the approximate location of licensed pipelines under its jurisdiction. The maps are produced on an individual township basis; if a township is very congested, a larger scale is used, e.g., quarter section. The base plan maps show the best pipeline location data available to the ERCB and identify the licence number of each pipeline. Under no circumstances should these maps be used for physically locating pipelines, as they only provide a general representation of the pipeline route.

When an application is approved, the ERCB transfers the base map information to the master graphics file, which is available to all users. The base maps provided by ERCB Information Services are used to digitize the location of pipelines and must be at an 11 x 17 inch format. The ERCB does not require that the applicant submit as-built or survey drawings, but does require that the accuracy of plotting pipelines on the base map reflect the actual surveyed route.

Base map(s) must be submitted for new construction, abandonment, discontinuation, removal, resumption, change of substance (when the licence numbers change), pipeline(s) not constructed, and pipeline installations.

39) The most recent pipeline base map must be obtained from ERCB Information Services on 11 x 17 inch paper prior to submitting a pipeline application.

40) Pipeline base maps must be used to identify other pipeline licensees that must be contacted for pipeline crossing agreements.

41) All markings on the map indicating pipelines should be made with a pen no thicker than 0.7 mm.

42) The applicant must complete the following tasks and submit one **original** of the applicable map with each application. If a photocopy is submitted, the application will be closed.

    a) Indicate the new pipeline(s) or resumption of operation in red.

    b) Indicate a pipeline installation by drawing a red box on the base map at the appropriate location.

    c) Indicate pipelines to be abandoned, discontinued, or removed in green.

    d) Indicate installation to be abandoned or removed in green.

    e) Determine the appropriate licence and line number from ERCB records and identify them on the base map(s).

    f) If the application is for new construction and a new licence is required, label the base map(s) with the substance to be transported. The ERCB will assign a new licence number.

    g) Indicate the existing pipeline for a line split in red. In blue or black put a line across the existing pipeline where the line split is located

    h) Indicate in red the existing pipeline for a substance change. Cross off the old licence number in green.

6.9.15 Maximum Operating Pressure Increase

43) The applicant/licensee must determine if any of the following is affected by an increase in MOP and take the appropriate mitigative action to ensure continued compliance:

   a) testing requirements to confirm capability for the increased pressure

   b) overpressure protection on upstream and downstream pipelines

   c) pipeline class redesignation

   d) pipeline level reclassification

   e) potential setbacks

   f) partial pressure of H_2S (Categories C and D only)

   g) material and standard suitability

44) If the applicant determines that the pipeline operation will change either the personal consultation and confirmation of nonobjection and/or the notification requirements, the applicant must initiate consultation and/or notification (see Table 6.2).

6.9.16 Maximum Operating Pressure Decrease

45) The applicant/licensee must determine if any of the following is affected by a decrease in MOP and take the appropriate mitigative action to ensure continued compliance:

   a) pipeline integrity under the new MOP

   b) pressure compatibility with upstream and downstream pipelines

   c) pipeline level reclassification

6.9.17 Substance Change

A pipeline licence is substance specific. If a licensee intends to transport a substance other than the substance for which the pipeline is currently licensed, a licence amendment application is required. If the substance for all lines on one licence is changing, the applicant can submit one application using Schedule 3 and 3.1. If not all lines for the one licence are changing, then the applicant must submit two applications using Schedules 3 and 3.1; one to delete the changed lines from the original licence and the second to license the lines for the new substance.

46) When changing the substance, the applicant/licensee must consider the following and take appropriate mitigative actions to ensure continued compliance:

   a) pressure-testing requirements

   b) pipeline level reclassification

   c) impact on setbacks and personal consultation and notification (see Table 6.2)

   d) depth of pipeline cover

   e) pipeline warning sign requirements—the licensee must update pipeline warning signs to reflect the new substance before operations begin

   f) potential class redesignation

g) ERP changes (*Directive 071*)

h) corrosion monitoring and mitigation—if the substance is corrosive, effective internal corrosion mitigation and monitoring programs must be implemented according to *Pipeline Regulation*, Section 54, and CSA Z662

47) To connect a Category C or D gas pipeline to an oil effluent pipeline, the applicant must file a nonroutine pipeline licence application and

a) provide an engineering assessment to ensure that the pipeline meets the requirements of CSA Z662 and the *Pipeline Regulation*,

b) consider the requirements of Table 6.3 and *Directive 071*, and

c) conduct personal consultation and notification (Table 6.1).

6.9.18 Liner Type

A liner is defined as a tubular product that is inserted into buried pipeline to form

- a corrosion-resistant barrier, or
- a separate free-standing pressure-containing pipe.

The applicant may choose to install a liner in a pipeline to improve or maintain the integrity of the pipeline.

48) The applicant must identify the correct type of liner for the substance transported in the pipeline.

49) To file a routine application, the applicant must use one of the following liner types:

a) free-standing fibreglass—considered pressure containing

b) free-standing reinforced composite liners—considered pressure containing. Refer to *Directive 056*'s *Process for Pipeline Applications for Fiberspar, Flexpipe, or FlexSteel Composite Pipes*, available on the *Directive 056* Web page for limitations on routine filing.

c) free-standing polyethylene liners—considered pressure containing

d) expanded polyethylene liners—considered to be internal corrosion barriers and not pressure containing

50) Expanded polyethylene liners and the supporting pressure-containing pipe must be designed and pressure tested according to current CSA standards. Consideration should be given to temperature design and hydrocarbon absorption. For sour service, the supporting pressure-containing pipe must meet sour service requirements.

51) For all other liner types or new technologies, the applicant must file a nonroutine pipeline licence amendment.

Notification is not mandatory for liner installations (see Table 6.2).

6.9.19 Sour Service Pipelines

There are specific requirements in Clause 16 of CSA Z662 for the design, materials, construction, operation, and maintenance of sour service pipelines. Sour service is defined as:

- for pipeline systems containing gas, service in which the H_2S gas partial pressure exceeds 0.30 kPa at the licensed MOP; and
- for gas-free liquid pipeline systems, service in which the effective H_2S partial pressure exceeds 0.30 kPa.

Multiphase (oil effluent) pipelines can include lines containing gas or that are gas free, depending on the fluids involved, and therefore can occur under either definition of sour service.

The gas definition is used for any service containing a gas phase. This would include gas pipelines and could include multiphase (oil effluent) pipelines and acid gas pipelines.

The gas-free liquid definition would be used for liquid pipelines that have no separate gas phase at operating conditions, but contain dissolved gas in the liquid that would evolve at the bubble point. This could apply to such service situations as oilfield water, crude oil, water-oil emulsions, or other liquids containing dissolved H_2S.

52) The applicant must calculate the H_2S partial pressure or effective partial pressure to determine the need to meet CSA Z662 sour service requirements based on the following criteria:

   a) For pipeline systems containing gas, partial pressure can be determined by multiplying the mole fraction (mol/kmol divided by 1000) of H_2S in the gas by MOP (kPa). Sour service requirements must be met if the H_2S gas partial pressure exceeds 0.30 kPa at the licensed MOP.

   b) For gas-free liquid systems, the effective H_2S partial pressure can be determined by the method in *NACE MR0175/ISO 15156, Part 2, Annex C*. Sour service requirements must be met if the effective H_2S gas partial pressure exceeds 0.30 kPa, regardless of the category and type of the pipeline.

Existing pipelines that were licensed prior to January 1, 2008, in compliance with the sour service definition of editions of CSA Z662 prior to Z662-07 may continue to operate within compliance, providing that there is no change in licensed service conditions.

Existing oil effluent pipelines with an H_2S partial pressure between 0.30 and 70 kPa and licensed prior to January 1, 2008, that experience a change in service conditions resulting in an H_2S partial pressure increase may continue to operate within compliance, providing that they remain an oil effluent pipeline with H_2S partial pressure at or below 70 kPa.

If an amendment to an existing pipeline results in the pipeline meeting the definition of sour service and the pipeline will not continue to operate within compliance as described above, refer to *ERCB Reference Tool for Sour Service Conversion of Existing Carbon Steel Pipelines*, found on the *Directive 056* Web page.

6.9.20 Canadian Standards Association (CSA) Standards

If the *Pipeline Act* and *Pipeline Regulation* differ from CSA requirements, the act and regulation govern. CSA states that the materials intended for sour service must comply with the requirements of the sour service clause of the applicable CSA Z245 standard; if no applicable CSA standard exists, the current material requirements of NACE MR0175/ISO 15156 apply. Steel pipe, fittings, flanges, and valves must meet the applicable requirements of a standard or specification given in Table 5.3 of CSA Z662, with the acceptable materials and limitations indicated.

53) At a minimum for sour service pipelines, the applicant must meet the following CSA material standards:

   a) Steel Pipe—CSA Z245.1,

   b) Steel Fittings—CSA Z245.11,

   c) Steel Flanges—CSA Z245.12, and

   d) Steel Valves—CSA Z245.15.

54) For pipeline installations

   a) piping upstream and downstream of a line heater must meet CSA Z662,

   b) piping within the line heater must be designed to American Society of Mechanical Engineers (ASME) B31.3,

   c) compressor and pump stations must meet CSA Z662, and

   d) as indicated in the preface of CSA Z662, ASME B31.3 is only permissible for internal piping for compressor and pump stations.

The ERCB has created a document to aid in the interpretation of the regulatory interrelationships on pipeline systems. The *Reference Tool for Interpreting Jurisdictional Relationships for Pipeline, Pressure Equipment, and Pressure Piping* is available on the *Directive 056* Web page.

6.9.21 Injecting Natural Gas Containing H_2S into a Producing Reservoir

When a producing reservoir has an approved enhanced recovery scheme that allows the injection of natural gas containing H_2S, the pipeline licensee must review the impact of the scheme operation on the pipeline materials and operating parameters.

55) The applicant must evaluate the potential for

   a) gas cap breakthrough,

   b) reclassification of existing pipeline systems due to an increase in H_2S content,

   c) reclassification of producing wells as critical wells, and

   d) licence amendment applications to meet CSA sour service material requirements for the pipelines affected.

6.9.22 Stress Level

Stress level is defined as the stress in the wall of a pipe that is produced by the pressure of the fluids in the pipeline. This section describes the stress level calculation for steel, aluminum, and polyethylene pipeline materials. There is no stress level calculation for fibreglass or composite pipeline materials.

Stress level is calculated as a percentage using the following formulas:

- for steel or aluminum pipe material,

$$\frac{(\text{MOP kPa})\ (\text{outside diameter mm})}{(20 \times \text{pipe specified minimum yield strength MPa})\ (\text{wall thickness mm})}$$

- for polyethylene pipe material,

$$\frac{(\text{MOP kPa})\ (\text{outside diameter mm} - \text{wall thickness mm})}{(20 \times \text{pipe long-term hydrostatic strength MPa})\ (\text{wall thickness mm})}$$

56) The applicant must meet all applicable CSA Z662 design requirements.

   a) For steel pipe:

      i) For any temporary or permanent surface pipeline containing greater than 10 mol/kmol H_2S gas, the stress level must not exceed 50 per cent.

      ii) For buried pipelines containing greater than 10 mol/kmol H_2S gas, the stress level must not exceed 60 per cent.

      iii) For all other steel pipelines, the stress level must not exceed 72 per cent unless otherwise approved by the ERCB. In this case, the applicant must file a nonroutine application.

   b) For aluminum pipe, the stress level must not exceed 72 per cent unless otherwise approved by the ERCB. In this case, the applicant must file a nonroutine application.

   c) For type 3408, 3608, or 3708 polyethylene pipe with a design temperature less than 23°C:

      i) For wet gas gathering, oil effluent, and low vapour pressure service, the stress level must not exceed 25 per cent.

      ii) For gas distribution, the stress level must not exceed 40 per cent.

      iii) For dry gas gathering and water service, the stress level must not exceed 50 per cent.

   These limitations are not applicable for type PE80, PE100, 3710, or 4710 polyethylene pipe.

57) For all other pipeline materials and new technologies, the applicant must file a nonroutine pipeline licence application.

6.9.23 Pipeline Installation

A pipeline installation is defined as any equipment, apparatus, mechanism, machinery, or instrument incidental to the operation of a pipeline. This includes a compressor station, pump station, line heater (Categories C and D), tank farm, and pipeline loading and unloading facility associated with pipelines carrying processed (sales) product.

58) When applying for a pipeline installation, the applicant must fulfill personal consultation, confirmation of nonobjection, and notification requirements for potentially directly and adversely affected parties in accordance with Table 6.1.

59) Where applicable, the applicant must meet

   a) noise requirements defined in *Directive 038*,

   b) the requirements of *IL 88-05*,

c) ERCB storage requirements (see *Directive 055*), and

d) ERCB spacing requirements as defined in the *Oil and Gas Conservation Regulations,* Section 8.

6.9.23.1 Process Flow Diagrams

60) The applicant must attach a process flow diagram (PFD) for all pipeline installation applications.

   a) The PFD must identify all existing and proposed equipment at the pipeline installation.

      i) New equipment must be identified in the legend and annotated on the diagram.

Typical diagrams are acceptable providing that they accurately represent the actual operations of the installation and contain the correct location and applicant name.

   b) The applicant must clearly identify the following on the PFD:

      i) process equipment

      ii) measurement points

      iii) storage tanks

      iv) source(s) of all inlet/receipts and/or deliveries, including all fuel lines, flare lines, and vent points

      v) safety equipment

6.9.23.2 NO_x Emissions

If NO_x emissions are present, it is the applicant's responsibility to ensure that the facility meets the *Alberta Ambient Air Quality Objectives* (*AAAQO*) for NO_2. It is possible that facilities exempt from registration with Alberta Environment could exceed the *AAAQO*. It is in the company's best interest to conduct modelling to ensure that its facility will meet the *AAAQO*. In order to demonstrate that the facility meets the *AAAQO*, the ERCB may require that the applicant provide NO_x modelling.

61) In designing its needs, the applicant must design the pipeline installation to meet the requirements set out in *IL 88-05* and Alberta Environment's *Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants.*

62) The applicant must register all compressor and pumping stations with Alberta Environment before commencing operation if the total NO_x emissions are greater than 16 kg/h.

63) New and additional natural gas-driven reciprocating engines greater than 600 kW at full load must not emit more than 6 grams of NO_x per kilowatt-hour (g/kWh).

64) The applicant must meet the following requirements when NO_x emissions are present at facilities that require registration or approval with AENV:

   a) Dispersion modelling must be conducted in accordance with Alberta Environment's *Air Quality Model Guideline* (http://environment.gov.ab.ca/info/library/6709.pdf).

b) Based on dispersion modelling, predicted NO_2 concentrations must meet the *AAAQO* using guidance from the *Air Quality Model Guideline*.

c) Standby equipment used only for emergency purposes can be excluded from dispersion modelling.

d) The engine exhaust stack height must be set in accordance with the direction given in *IL 88-05: Application for Approval of Natural Gas Driven Compressors* and Alberta Environment's *Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants.*

e) NO_x emissions from steam generating units, heaters, and boilers can be excluded from dispersion modelling if their combined contribution is less than 3 per cent of the total NO_x emissions.

6.9.23.3 Plot Plans

65) A plot plan must be submitted with each pipeline installation application that clearly indicates the on-lease location of all the equipment (with the exception of valves) indicated on the PFD. It must also reflect a minimum of 100 m past the edge of the lease to demonstrate that all off-lease spacing requirements have been met (e.g., distance to a residence, water bodies, forestation, or road allowance).

66) The applicant is expected to meet the spacing requirements of the *Oil and Gas Conservation Regulations*, Section 8, as applicable (see Appendix 7).

6.9.23.4 Noise

All pipeline installations under the ERCB's jurisdiction must meet the requirements of *Directive 038.*

A noise impact assessment (NIA) will ensure that the applicant has considered possible noise impacts before a pipeline installation is constructed or operated. The NIA predicts the expected design sound level from the pipeline installation at the nearest or most impacted residence.

67) Applicants must discuss noise matters with area residents during the design, construction, and operating phases of the pipeline installation.

68) An NIA must be completed prior to the submission of a pipeline installation application for any new permanent pipeline installation or for modifications to existing permanent pipeline installations if there is a reasonable expectation of a continuous or intermittent noise source.

    a) For the purpose of an NIA, a permanent pipeline installation is a pipeline installation in operation for more than 2 months.

69) If the NIA indicates the permissible sound level will be exceeded, the applicant must consider further mitigative measures.

    a) Where mitigative measures are not practical, the applicant must file a nonroutine licence application and explain why mitigative measures are not practical.

70) The ERCB expects the applicant to use a reasonable technical basis for the values presented in the NIA, such as computer modelling, field measurements of similar

equipment, accepted acoustical engineering examples from literature, and calculations.

71) If the applicant is using manufacturer's specifications, the sound level ratings must represent free or far field conditions.

    a) Sound level ratings at 1 m are not acceptable for inverse square law calculations.

See *Directive 038* for further discussions.

6.9.24 Blending of Products

Product blending is defined as the combination of similar products with different H_2S contents for the purpose of maintaining a lower H_2S content in the blended stream. Blending a liquid stream with a gas stream is not permitted.

72) The applicant must ensure that the H_2S content in the final blended stream does not exceed the licensed H_2S content of the receiving pipeline.

73) The applicant must submit a nonroutine application and include a detailed description of the design for

    a) flow ratio control with or without automatic shutdown, and

    b) H_2S monitoring (or flow ratio control) with automatic shutdown in accordance with the *Pipeline Regulation*, Section 14.

6.9.25 Proliferation

As the proponent of a new oil or gas facility or pipeline, the applicant has already determined that the proposed project will meet its business needs. The ERCB, as the approving authority, is required to evaluate the need for the proposed project in the broader public interest. The ERCB considers this interest in terms of economic, orderly, and efficient development of Alberta's oil and gas resources.

The ERCB continues to receive strong input from the public, who are aware of the growth of resource development. The ERCB accepts the public's view that pipeline proliferation should be avoided whenever possible and practical.

Pipeline development is to be carried out in a manner that minimizes the overall impacts on the environment and public. Proliferation of pipelines occurs when new development results in greater surface disturbances and impact on the public than would be the case if existing infrastructure were used.

6.9.26 ERCB Environmental Requirements

In 1993, the ERCB issued *IL 93-09: Oil and Gas Developments Eastern Slopes (Southern Portion)*, setting guidelines and expectations for oil and gas development in this region. These expectations were further clarified in *Bulletin 2007-35: Clarification of Informational Letter (IL) 93-09: Oil and Gas Development Eastern Slopes (Southern Portion)*.

74) If the proposed pipeline is located within the Eastern Slopes (Southern Portion), the applicant must meet the General Expectations described in *IL 93-09* by

a) preparing development plans beyond the initial exploration stage, taking into consideration current stages such as
    i) pool delineation (initial),
    ii) pool delineation (subsequent), and
    iii) pool development, and
b) developing environmental assessments, as outlined in *IL 93-09*.

The ERCB will review all applications and the supporting information submitted as part of a nonroutine application prior to issuing a licence.

6.9.27 Additional Application Requirements

75) Applicants must review Section 8: Additional Application Requirements and meet all requirements applicable to the proposed location.

6.10 Audit Documentation Requirements—Schedule 3

76) For applications selected for audit review, licensees must submit the following documents within 14 calendar days of notice of audit or within the time frame directed by ERCB Facilities Applications.

77) From the audit documents, Facilities Applications must be able to determine that the applicant fulfilled all requirements to ensure regulatory compliance prior to filing the application.

78) For licence amendment applications, the applicant may submit only the audit documentation that was affected by the amendment activity.

The detailed list of audit documents below corresponds with the steps found in Schedule 3.

6.10.1 Step 1: Identification

No documentation required.

6.10.2 Step 2: Participant Involvement Requirements

6.10.2.1 Participant Involvement Map Requirements

79) The licensee must submit a map(s) that illustrates
a) the location of the pipeline/installation,
b) the location of all parties included in the participant involvement process (e.g., residents, existing infrastructure),
c) the area of investigation used in the personal consultation and notification program,
d) the emergency planning zone (if applicable), and
e) the area of investigation used in the industry notification program (if applicable).

6.10.2.2 Industry Notification Requirements

80) If industry notification occurs, the licensee must submit a record of contact with other industry parties that includes

   a) name, address, and telephone number of all parties contacted,

   b) copies of all related correspondence received, and

   c) disclosure meeting minutes that include

      i) date of meeting,

      ii) meeting notice and/or invitation,

      iii) invitation list,

      iv) names, addresses, and telephone numbers of all meeting participants, and

   d) project information presented at meetings or otherwise distributed.

6.10.2.3 Personal Consultation and Notification Requirements

81) The applicant must submit a record of the personal consultation and notification program that was conducted, using a tabular format similar to the Sample Participant Involvement Summary Form (Appendix 4).

82) The summary must include

   a) name of each party (e.g., landowner, occupant, and resident) included in the personal consultation and notification program,

   b) legal land description for each party,

   c) a description of each party's interest in the land (e.g., trapper, landowner, and resident),

   d) date and type of contact conducted with each party (e.g., telephone conversation, registered mail, personal meeting),

   e) date the ERCB brochure and *EnerFAQs No. 7* were distributed if required,

   f) date the project-specific information package was distributed,

   g) date the required EnerFAQs package was provided, and

   h) date the confirmation of nonobjection was obtained if required.

6.10.2.4 Confirmation of Nonobjection

83) The ERCB does not require that confirmation of nonobjection be in the form of a signature; however, documentation must be submitted when available.

   Confirmation of nonobjection may consist of one of the following documents, depending on the nature of the proposed development:

   a) Freehold lease agreement (Freehold also includes Federal Lands and Provincial Special Area Board Lands)

      i) The licensee must submit a copy of the agreement, which confirms the parties involved, date of agreement, and location of land involved.

b) Crown disposition (i.e., unsigned Pipeline Lease Agreement; signed Individual Ownership Plat, Miscellaneous Lease, or Pipeline Installation Lease; executed Area Operating Agreement or Temporary Field Authorization)

   i) In the case of an Area Operating Agreement (AOA), the licensee must submit copies of the following AOA documents:

      - the "title page" (including the details of the expiry date, company name, and area of operation),
      - the "signoff page" (including when the agreement was executed), and
      - geographical map and locations list.

   ii) In the case of a pipeline lease agreement (PLA), the licensee must provide a copy of the PLA application and number issued by Alberta Sustainable Resource Development (SRD), which confirms the parties involved, the date of the application, and the location of the land involved.

   iii) For all other Crown dispositions, the licensee must submit a copy of the agreement, which confirms the parties involved, the execution of the agreement (signature), the date of the agreement, and the location of the land involved.

c) Signed document that identifies the details of the proposal (e.g., signatory page from the applicant's information package)

84) If confirmation of nonobjection is verbal, the licensee must document (log) the name of the party providing verbal nonobjection and the date on which verbal nonobjection was obtained.

6.10.2.5 Information Packages

85) The licensee must submit a copy of the project-specific information package that was distributed to the parties included in the participant involvement process.

It is not necessary to include a copy of the ERCB's documents in the audit submission; however, details of its distribution must be included.

6.10.2.6 Resolved Concerns and Objections

86) If concerns/objections were received and resolved during the course of the participant involvement process, the licensee must submit

   a) a record and explanation of any concerns/objections received, and

   b) documentation confirming the resolution of any concerns/objections.

6.10.2.7 Sour Gas Planning and Proliferation

87) If there are residents located within the EPZ of the pipeline, the applicant must submit

   a) the assessment of existing infrastructure required by Section 8.3.2, and

   b) the updated expanded project-specific information package, as described in Section 8.3.2.

6.10.3 Step 3: Emergency Response Planning

88) The licensee must keep a copy of the corporate-level ERP or, if required, the specific ERP on file for review upon request. It is not required for inclusion in the audit submission.

    a) The licensee must include in the audit submission a statement confirming that it has an approved corporate plan and/or that a site-specific plan will be approved prior to operations.

6.10.4 Step 4: Type of Application

No documentation required.

6.10.5 Step 5: New Construction/Additions Only

No documentation required.

6.10.6 Step 6: Licence Amendment Only

No documentation required.

6.10.7 Step 7: Technical Considerations

6.10.7.1 H_2S Content Requirements

89) For all pipelines, the licensee must submit a representative gas analysis.

6.10.7.2 Partial Pressure

No documentation required.

6.10.7.3 CSA Z662

90) For all pipelines, the licensee must submit

    a) a description of the methodology or process used to ensure that CSA standards are met,

    b) a list of the licensed substance and MOP of the pipeline(s) into which the proposed pipeline is tied,

    c) a description of pressure control and overpressure protection,

    d) mill certificates or other documentation to confirm that the pipe is suitable for the product being transported,

    e) specifications for the valves, flanges, and fittings,

    f) documentation of a quality assurance program to ensure that material is suitable for sour service, and

    g) a description or map showing valve locations and spacing.

6.10.7.4 Corrosion

91) If the licensee has indicated that appropriate corrosion mitigation in accordance with the requirements of CSA Z662 and the *Pipeline Regulation* is in place, the applicant must be able to provide the evaluation performed to access the corrosivity of the pipeline and the need for corrosion mitigation.

92) If a corrosion mitigation plan has been deemed necessary, the licensee must provide

  a) a detailed summary of the corrosion mitigation plan that outlines the scheduled actions that will be conducted,

  b) a detailed summary of the monitoring plan that outlines the scheduled actions that will be conducted, and

  c) a description of the scheduled actions that will be conducted to review the monitoring results and assess mitigation plan performance.

6.10.7.5 Leak Detection

93) For liquid hydrocarbon pipelines that require leak detection, the licensee must submit a detailed description of procedures for leak detection, including frequency of right-of-way inspections, material balance parameters, and confirmation that employees have had or will receive training (see CSA Z662, Annex E).

6.10.7.6 Steam Pipelines

94) The licensee must submit documentation verifying that the pipeline is registered with the Alberta Boilers Safety Association.

6.10.7.7 Production Stream Blending

No documentation required.

6.10.7.8 Pipeline Installations

95) For all pipeline installations, the licensee must submit

  a) a wellhead or inlet gas analysis representative of the inlet stream,

  b) a PFD that meets the requirements of Section 6.9.23.1,

  c) a site-specific plot plan showing the placement of and distances between equipment, and

  d) a list of each type of meter proposed for each measurement point and their locations.

96) For compressor/pump stations, the licensee must also submit

  a) manufacturer's specifications for the proposed unit that confirms emission ratings, unit size, and driver type,

  b) an NIA prepared in accordance with *Directive 038*,

  c) a breakdown and total of all sources of NO_x emissions in kg/h, and

  d) documentation to demonstrate that the exhaust stack height requirements of *IL 88-05* are met if total NO_x emissions are less than 16 kg/h.

97) For tank farms/oil loading and unloading terminals where products and materials will be stored on site, the licensee must also submit a list of materials that will be stored and a description of the storage method(s), including details of

  a) design and construction,

  b) leak detection,

  c) secondary containment,

d) weather protection, and

e) primary containment device and size.

98) For line heaters, the licensee must also submit documentation verifying that the line heater is designed to *Alberta Boilers Safety Codes Act* (B31.3) requirements.

6.10.8 Step 8: Natural Gas/Oil Effluent Pipelines > 10 mol/kmol H_2S

6.10.8.1 Release Volume and Level Designations

99) For natural gas and oil effluent pipelines greater than 10 mol/kmol H_2S, the licensee must submit

a) the input parameters used to calculate the potential H_2S release volume,

b) representative tie-in schematics of ESD valves, and

c) a system map showing ESD and check valve locations.

6.10.8.2 Injection

100) If injecting into a producing reservoir, the licensee must give an explanation as to the impact the scheme operation will have on the pipeline material and operating parameters.

6.10.9 Step 9: Substance Change, H_2S Increase, MOP Increase, and Liner Installation

6.10.9.1 Substance Change

101) The licensee must submit documentation that

a) confirms that the pipe, valves, flanges, and fittings are suitable for the new substance,

b) confirms that the depth of cover is sufficient (HVP pipelines only), and

c) demonstrates the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change (i.e., does it meet current code and regulation requirements?).

MOP Change/H_2S Change

102) The licensee must submit

a) documentation verifying that the pipe, valves, flanges, and fittings are suitable for the new MOP,

b) a detailed evaluation of the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change (e.g., does it meet current code and regulation requirements?), and

c) pressure test charts.

6.10.9.2 Liner Installation

103) The licensee must submit liner specifications and pressure test charts if available.

6.10.10 Step 10: Discontinuation, Abandonment, and Resumption Only

6.10.10.1 Resuming Operation of a Pipeline

104) For resuming operation of a pipeline, the licensee must

a) submit pressure test charts,

b) submit documentation to verify the depth of cover (HVP only),

c) provide a record of cathodic protection (cathodic protection survey),

d) provide a record of the medium left in pipeline(s),

e) provide the pipeline external coating integrity results,

f) ensure that sour service requirements are met (e.g., mill certificates), and

g) submit a detailed evaluation of the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change (i.e., does it meet current code and regulation requirements?).

6.10.10.2 Pipeline Discontinuation

105) For pipeline discontinuation, the licensee must submit

a) a description of the method used to discontinue the pipeline(s),

b) a record of the medium left in the pipeline(s), and

c) documentation to confirm that cathodic protection will be maintained.

6.10.10.3 Pipeline Abandonment

106) For pipeline abandonment, the licensee must submit

a) a description of the method used to abandon the pipeline(s), and

b) a record of the medium left in the pipeline(s).

6.10.10.4 Surface Facility Reclamation

No documentation required.

6.10.11 Step 11: Environmental Requirements

6.10.11.1 Questions 1, 2, and 3

No documentation required.

6.10.11.2 Transportation/Utility Corridor

107) The licensee must submit documentation confirming that the pipeline/installation has received Ministerial Consent from *Alberta Infrastructure*.

Table 6.4 provides a summary of documents required for submission. Please refer to the referenced sections for full details. The ERCB reserves the right to request the submission of additional information not listed below that may assist in completing the review of an application.

6.10.11.3 ERCB Environmental Requirements

No documentation required.

Table 6.4. Pipeline application audit checklist

Section No.	Y	N	N/A	Audit Documents
6.10.2	**Step 2: Participant Involvement Requirements**			
6.10.2.1	**Participant Involvement Map Requirements**			
				Map
6.10.2.2	**Industry Notification Requirements**			
				Record of contact with other parties, including name, address, telephone number
				Copies of all correspondence between parties
				Minutes of meetings held, including • Date of meeting • Meeting notice or invitation • Invitation list • Name, address, and phone number of all meeting participants
				Copies of the project information presented at meetings or otherwise distributed
6.10.2.3	**Personal Consultation and Confirmation of Nonobjection**			
				Participant Involvement Summary
6.10.2.4	**Confirmation of Nonobjection**			
				Freehold lease agreement
				Crown disposition
				Signed information document
				Documented verbal consent
				Written agreement to proceed to Surface Rights Board
6.10.2.5	**Information Packages**			
				Applicant's project-specific information package
				List of all documents provided to participants
				Documented refusal of information packages
6.10.2.6	**Resolved Concerns and objections**			
				A record and explanation of any concerns/objections received
				Documentation demonstrating resolution of the concerns/objections received
6.10.2.7	**Sour Gas Planning and Proliferation**			
				If there are residents located within the EPZ of the pipeline, the assessment of existing infrastructure required by Section 8.3.2
				The additional project-specific information package details identified in Section 8.3.2
6.10.3	**Step 3: Emergency Response Planning**			
				Statement confirming that a corporate or specific plan will be in place prior to operation
6.10.6	**Step 6: Licence Amendment Only**			
				No documentation required
6.10.7	**Step 7: Technical Considerations**			
6.10.7.1	**Question 1: H_2S Content**			
				A gas analysis (continued)

Table 6.4. Pipeline application audit checklist (continued)

Section No.	Y	N	N/A	Audit Documents
6.10.7.3	**Question 3: CSA Z662**			
				Description of the methodology or process used to ensure CSA standards are met
				List of the licensed substance and MOP of the pipeline(s) into which the proposed pipeline is tied
				Description of overpressure protection
				Mill certificates or other documentation to confirm that the pipe is suitable for the product being transported
				Specifications for the valves, flanges, and fittings
				Documentation of a quality assurance program to ensure that material is suitable for sour service
				Description or map showing valve locations and spacing
6.10.7.4	**Question 4: Corrosion**			
				Evaluation performed to assess the corrosivity of the pipeline and the need for mitigation
				If a corrosion mitigation plan has been deemed necessary, • a detailed summary of the corrosion mitigation plan that outlines the scheduled actions that will be conducted, • a detailed summary of the monitoring plan that outlines the scheduled actions that will be conducted, and • a description of the scheduled actions that will be conducted to review the monitoring results and assess mitigation plan performance
6.10.7.5	**Question 5: Leak Detection**			
				A detailed description of procedures for leak detection, including frequency of right-of-way inspections, material balance parameters, and confirmation that employees have or will have training
6.10.7.6	**Question 6: Steam Pipelines**			
				Documentation verifying that the pipeline is registered with the Alberta Boilers Safety Association (ABSA)
6.10.7.7	**Question 7: Production Stream Blending**			
				No documentation required
6.10.7.8	**Question 8: Pipeline Installations**			
				Wellhead or inlet gas analysis
				Process flow diagram (PFD)
				Site-specific plot plan
				List of each type of meter proposed for each measurement point and their location
				For facilities where the NO_x emissions are less than 16 kg/h, the licensee must submit documentation or a schematic diagram for each source stacks, demonstrating the stack height is 1.2 times the peak building height. (continued)

Table 6.4. Pipeline application audit checklist (continued)

Section No.	Y	N	N/A	Audit Documents
				If modelling was conducted, the licensee must submit • documents that clearly show that dispersion modelling was conducted in accordance with the *Alberta Air Quality Model Guideline;* • the source parameters, locations, elevations and NOx emission rates for all sources; • predicted normal and maximum ground-level NOx concentrations; • the name of the dispersion model that was used; • description of meteorological data used; and • terrain map of the study area
				Manufacturer specifications for the proposed unit that confirm emission ratings, unit size, and driver type
				A noise impact assessment
				A breakdown and total of all sources of NO_x emissions
				Documentation that storage requirements are met
				Documentation that the line heater is designed to ABSA (B31.3)
6.10.8	**Step 8: Natural Gas/Oil Effluent Pipelines > 10 mol/kmol H_2S**			
6.10.8.1	**Questions 1, 2, and 3: Release Volume and Level Designations**			
				Input parameters used to calculate the potential H_2S release volume
				Representative tie-in schematics of ESD valves
				A system map showing ESD and check valve locations
6.10.8.2	**Question 4: Injection**			
				An explanation as to the impact the scheme operation will have on the pipeline material and operating parameters
6.10.9	**Step 9: Substance Change, H_2S Increase, MOP Increase, and Liner Installation**			
6.10.9.1	**Question 1: for Substance Change**			
				Documentation that confirms that the pipe valves, flanges, and fittings are suitable for the new substance
				Documentation that confirms that the depth of cover is sufficient (HVP pipelines only)
				Documentation that demonstrates the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change
6.10.9.1	**Question 1: for MOP Change/H_2S Change**			
				Documentation verifying that the pipe, valves, flanges, and fittings are suitable for the new MOP
				A detailed evaluation of the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change
				Pressure test charts
6.10.9.2	**Question 2: Liner Installation**			
				Liner specifications and pressure test charts
6.10.10	**Step 10: Discontinuation, Abandonment, and Resumption Only**			
6.10.10.1	**Questions 1a and 1b: Pipeline Resumption**			
				Pressure test charts
				Documentation to verify the depth of cover (HVP only) (continued)

Table 6.4. Pipeline application audit checklist (concluded)				
Section No.	**Y**	**N**	**N/A**	**Audit Documents**
				A record of cathodic protection (cathodic protection survey)
				A record of medium left in pipeline
				Pipeline external coating integrity results
				Documentation to ensure that sour service requirements are met
				A detailed evaluation of the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change
6.10.10.2 Question 2: Pipeline Discontinuation				
				A description of the method used to discontinue the pipeline
				A record of the medium to be left in the pipeline
				Documentation to confirm that cathodic protection will be maintained
6.10.10.3 Question 3: Pipeline Abandonment				
				A description of the method used to abandon the pipeline
				A record of the medium to be left in the pipeline
6.10.10.4 Question 4: Surface Facility Reclamation				
				No documentation required
6.10.11 Step 11: Environmental Requirements				
6.10.11.1 Question 3				
				No documentation required
6.10.11.2 Question 4: Transportation/Utility Corridor				
				Documentation confirming that Ministerial Consent from Alberta Infrastructure has been obtained
6.10.11.5 Question 5: ERCB Environmental Requirements				
				No documentation required

Table 6.5 provides a summary of documents required for nonroutine application submission by step and question. Please refer to the questions specified in Section 6.11 for full details.

Table 6.5. Pipeline application nonroutine checklist

Question No.	Y	N	N/A	Nonroutine Submissions
Step 2: Participant Involvement Requirements				
Question 1: Consultation and notification requirements have been met: Public				
				The participant involvement summary of all personal consultation and notification that have been completed
				Name, address, telephone number, and legal land description of participants for which personal consultation and notification requirements have not been completed
				Detailed explanation of why all personal consultation and nonobjection requirements cannot be completed
				Detailed explanation of why all notification requirements cannot be completed
				An explanation of how you would like the ERCB to proceed with this application (continued)

Table 6.5. Pipeline application nonroutine checklist (continued)

Question No.	Y	N	N/A	Nonroutine Submissions
Question 1: Consultation and notification requirements have been met: Industry				
				Record of contact with industry parties conducted
				Copies of correspondence between parties
				Minutes of meetings held
				Copies of information distributed
				A summary of parties for which industry notification has not occurred
				A detailed explanation of why all industry notification requirements were not completed
				An explanation of how you want the ERCB to proceed with this application
Question 2: There are outstanding objection/concerns related to this application				
				Name, address, telephone number, and legal land description of participant(s) with outstanding concerns/objections
				Copy of the written concern/objection (or summary of issues if not available)
				A chronology of the participant involvement program conducted with the party
				Explanation of how you want the ERCB to proceed with your application
				A discussion of steps taken to mitigate the outstanding concerns/objection
				Copy of the applicant's project-specific information package
				List of other documents distributed
				Documentation in support of the Battle Lake application requirements (Section 8)
				If there are residents within the EPZ, you must also attach • the assessment of existing infrastructure required by Section 8.3.2 • the updated expanded project-specific information package, as described in Section 8.3.2 • A copy of an area plan described in Section 8.3.3 if it was completed
Step 6: Licence Amendment Only				
				Removal: documentation confirming that the entire line, including water, rail, and road crossings, is being removed Confirmation that notification requirements have been met
				Liner Type **"Other"**: a product specification sheet for the grade of liner material being installed and a detailed explanation
Step 7: Technical Considerations				
Question 3: The pipeline meets all current applicable CSA Z662 standards				
				A detailed explanation of what CSA Z662 standards are not being met and why
				A detailed technical assessment that demonstrates how design, construction, and operational considerations have addressed public safety and environmental concerns
				All applicable audit documents required by Section 6.10.7.3
				For Category C or D surface pipeline: • a detailed technical assessment that demonstrates how design, construction, and operational considerations described in Section 21 of the *Pipeline Regulation* will be met • a detailed explanation of the pipeline design, including consideration of the effects on downstream pipelines and compatibility with connecting pipelines (continued)

Table 6.5. Pipeline application nonroutine checklist (continued)

Question No.	Y	N	N/A	Nonroutine Submissions
				• a description of the measures taken to protect the surface pipeline from third-party damage • information on the corrosion control, monitoring program, and mitigation measures for the proposed surface pipeline, including assessing any impacts that adding and later removing the flow may have on the flow regimen of the connection pipelines, and • an explanation detailing the need for the surface pipeline
Question 4: Prior to operations, procedures for corrosion mitigation, monitoring, evaluation, and record keeping will be implemented				
				Explanation of why a corrosion program is not being implemented
				Detailed technical assessment that demonstrates why the requirements of the current CSA Z662 standard and *Pipeline Regulation* are not being met
				All applicable audit documentation required by Section 6.10.7.4
Question 5: The liquid hydrocarbon pipeline meets current leak detection requirements				
				Explanation of why leak detection requirements are not being met
Question 6: The design of the steam distribution line is registered with ABSA				
				Detailed explanation of why the design requirements will not be met
Question 7: Production stream with different H_2S contents will be blended				
				Detailed description of two independent techniques to ensure that the licensed H_2S content in the receiving pipeline is not exceeded, including • a detailed description of the design for flow ratio control with or without automatic shutdown, and • a detailed description of H_2S monitoring (or flow ratio control) with automatic shutdown
Question 8: The pipeline installation meets all applicable standards				
				Detailed explanation of the requirements not being met and why
				A detailed technical assessment that demonstrates how design, construction, and operational considerations have addressed public safety and environmental concerns
				All applicable audit documents required by Section 6.10.7.8
Step 8: Natural Gas/Oil Effluent Pipelines > 10 mol/kmol H_2S				
Question 2: This application will change the level designation of this pipeline or a connecting pipeline				
				A representative tie-in schematics of ESD valves
				Map showing • the levels for the pipeline system and the segments that are being revised, and • all residences and other developments with the notification distances
				Input parameters used to calculate the potential release volume of all affected segments
				Documentation verifying that personal consultation, nonobjection, and notification requirements have been met for all affected pipeline segments and that a revised ERP, if required, has been submitted
				A system map showing ESD and check valve locations (continued)

Table 6.5. Pipeline application nonroutine checklist (continued)

Question No.	Y	N	N/A	Nonroutine Submissions
Question 3: The setback requirements have been met				
				Detailed explanation of why setback requirements will not be met
				Map showing all residences and other developments within the notification distances and indicating where setback have not been met
Question 4: The pipeline will inject natural gas containing H_2S into a producing reservoir				
				Explanation that accounts for the effect the reservoir fluid composition may have on injection or producing wells and producing pipelines
				Detailed plan of steps that need to be taken to reclassify existing wells and pipelines
				Evidence that the potential for gas cap breakthrough has been evaluated
Step 9: Substance Change, H_2S Increase, MOP Increase, and Liner Installation				
Question 1: The presence of H_2S and/or an increase in MOP will reclassify the pipeline to Category C or D				
				Details of any required material testing or documentation confirming material and component suitability for sour service
				Evidence that • weld procedures are suitable for service conditions, • weld testing requirements have been satisfied, and • hydrostatic testing requirements have been satisfied
				Detailed explanation of compatibility with connecting pipelines
				Engineering assessment demonstrating compliance with sour service requirements of CSA Z662, as described in the *Reference Tool for Sour Service Conversion of Existing Carbon Steel Pipelines*, found on the Directive 056 Web page
				Engineering assessment following the additional criteria for sour service conversion involving gas with greater that 10 moles of H_2S per kilomole of natural gas and demonstrating pipeline integrity, as described in the *Reference Tool for Sour Service Conversion of Existing Carbon Steel Pipelines*, found on the Directive 056 Web page
Question 2: The liner is being installed due to internal corrosion, external corrosion, or other				
				If **Other,** submit liner specifications and a pressure test chart and attach a detailed explanation of why the liner is required
Step 10: Resumption, Discontinuation, and Abandonment Only				
Question 1a: The pipeline you are applying to resume operation of was discontinued in accordance with ERCB requirements				
				Detailed information confirming the integrity of the pipeline (external/internal)
				A comprehensive engineering assessment that supports the resumption
				Documentation as specified in Pipeline Applications—Checklist for Minimum Technical Requirements in Section 6.7.1
				If this pipeline was abandoned, documentation that demonstrates compliance with participant involvement requirements for all directly affected parties along the entire right-of-way and those affected by setbacks
Question 1b: The integrity of the discontinued pipeline has been verified				
				Explanation of why all necessary work to verify the integrity of the pipeline has not been undertaken
				Documentation as specified in Pipeline Applications—Checklist for Minimum Technical Requirements in Section 6.7.1 (continued)

Table 6.5. Pipeline application nonroutine checklist (concluded)

Question No.	Y	N	N/A	Nonroutine Submissions
Question 2: The pipeline was discontinued in accordance with ERCB requirements				
				Explanation of why the pipeline was not discontinued in accordance with the applicable ERCB requirements
Question 3: The pipeline was abandoned in accordance with ERCB requirements				
				Explanation of why the pipeline was not abandoned in accordance with the applicable ERCB requirements
Step 11: Environmental Requirements				
Question 3: Application has been made to AENV for Conservation and Reclamation approval (white area only)				
				Detailed explanation of why Conservation and Reclamation (C&R) approval has not been applied for
Question 4a: If YES, the pipeline/installation has ministerial consent from Alberta Infrastructure				
				Explanation of why ministerial consent has not yet been received
Question 5: The proposed pipeline/pipeline installation meets ERCB environmental requirements				
				A detailed explanation of why the facility does not meet ERCB environmental requirements and what measures will be in place to ensure that the facility will not have a negative impact on the environment
				If the facility is located within the area affected by *IL 93-09*, you must attach all materiel required by that IL

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 3

Pipeline Licence Application

DAY	MONTH	YEAR	ERCB APPLICATION NUMBER	APPLICANT'S REFERENCE

1. IDENTIFICATION

Company Name ______________________________ Applicant BA Code__________

2. PARTICIPANT INVOLVEMENT REQUIREMENTS

1. Consultation and notification requirements have been met: Public .... YES ☐ **NO** ☐
Industry .... YES ☐ **NO** ☐
2. There are outstanding objections/concerns related to this application .... **YES** ☐ NO ☐
3a. Distance to nearest residence ________km
3b. Distance to nearest surface development (pipeline installations only) ________km

3. EMERGENCY RESPONSE PLANNING

1. The applicant will meet ERCB requirements for emergency response planning .... YES ☐
2a. The pipeline requires a new emergency response plan .... YES ☐ NO ☐
2b. The pipeline requires an amendment to an existing emergency response plan .... YES ☐ NO ☐
3a. Maximum calculated emergency planning zone ____________km
3b. Number of surface developments in the emergency planning zone ____________

4. TYPE OF APPLICATION

Category Type______________

☐ New construction
☐ New pipeline installation

☐ Temporary surface pipeline (1 year maximum)
In use until ______________(MONTH-YEAR)

☐ Licence amendment
Licence number P ______________

5. NEW CONSTRUCTION/ADDITION ONLY

☐ New pipeline licence ☐ Addition to existing licence Licence number P __________

6. LICENCE AMENDMENT ONLY

☐ MOP increase
☐ MOP decrease
☐ Resumption

☐ Discontinuation
☐ Abandonment/Partial Removal
☐ **Removal**

☐ Not constructed
☐ Flow reversal
☐ H_2S increase

☐ H_2S decrease
☐ Other (specify)______________
☐ Liner Installation

Liner Type: ☐ Free-standing fibreglass ☐ Free-standing polyethylene ☐ Free-standing reinforced composite
☐ Expanded polyethylene ☐ **Other** (specify) ______________________________

☐ Substance change: From licence number* P __________ Substance Code______ To licence number* P __________ Substance Code________

*Attach a separate Schedule 3 and 3.1 for each licence.

7. TECHNICAL CONSIDERATIONS

1. The H_2S content is ________ mol/kmol.
2. The partial pressure or effective partial pressure of H_2S is ____________ kPa.
3. The pipeline meets all current applicable CSA Z662 standards .... YES ☐ **NO** ☐
4. Prior to operation, procedures for corrosion mitigation, monitoring, evaluation, and record keeping will be implemented .... YES ☐ **NO** ☐ N/A ☐
5. The liquid hydrocarbon pipeline meets current leak detection requirements .... YES ☐ **NO** ☐ N/A ☐

If you check a BOLD response, you must attach supporting information.(Schedule 3 continued on next page)

Company Name______________________________

APPLICANT'S REFERENCE ______________________________

6. The design of the steam distribution line is registered with ABSA YES ☐ **NO** ☐ N/A ☐
7. Production streams with different H_2S contents will be blended **YES** ☐ NO ☐
8. The pipeline installation meets all applicable standards YES ☐ **NO** ☐ N/A ☐

8. NATURAL GAS/OIL EFFLUENT PIPELINES > 10 mol/kmol H_2S

1. H_2S release volume Proposed/Existing __________ m^3 Level designation: ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

   For more than one pipeline, a table of release volumes and level designations is attached. ☐
2. This application will change the level designation of this pipeline or a connecting pipeline **YES** ☐ NO ☐
3. The setback requirements have been met YES ☐ **NO** ☐
4. The pipeline will inject natural gas containing H_2S into a producing reservoir **YES** ☐ NO ☐

9. SUBSTANCE CHANGE, H_2S INCREASE, MOP INCREASE, AND LINER INSTALLATION ONLY

1. The presence of H_2S and/or an increase of MOP will reclassify the pipeline to Category C or D **YES** ☐ NO ☐ N/A ☐
2. The liner is being installed due to ☐ Internal Corrosion ☐ External corrosion ☐ **Other** (specify) ____________________

10. RESUMPTION, DISCONTINUATION, AND ABANDONMENT ONLY

1a. The pipeline you are applying to resume operation of was discontinued in accordance with ERCB requirements YES ☐ **NO** ☐

1b. The integrity of the discontinued pipeline has been verified YES ☐ **NO** ☐

2. The pipeline was discontinued in accordance with ERCB requirements YES ☐ **NO** ☐
3. The pipeline was abandoned in accordance with ERCB requirements YES ☐ **NO** ☐
4. In case of abandonment, all associated surface facilities will be removed and the surface site reclaimed within 1 year YES ☐ NO ☐

11. ENVIRONMENTAL REQUIREMENTS

1. The pipeline will be constructed in accordance with AENV's *Environmental Protection Guidelines* YES ☐ N/A ☐
2. The applicant will comply with the *Code of Practice* in accordance with the Water Act. YES ☐ N/A ☐
3. Application has been made to AENV for Conservation and Reclamation Approval (white area only) YES ☐ **NO** ☐ N/A ☐

   If application has been advertised, provide the Notice Expiry Date ______________(DAY-MONTH-YEAR)
4. The proposed pipeline/pipeline installation is located within the Calgary or Edmonton Transportation/Utility Corridor YES ☐ NO ☐

4a. If YES, the pipeline/pipeline installation has Ministerial Consent from Alberta Infrastructure YES ☐ **NO** ☐ N/A ☐

5. The proposed pipeline/pipeline installation meets ERCB environmental requirements YES ☐ **NO** ☐

6.11 How to Complete Pipeline Licence Application Schedules

6.11.1 How to Complete Schedule 3: Pipeline Licence Application

Date

Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).

Applicant's Reference

Enter your own file reference in the designated area (optional).

Step 1: Identification

Company Name

Enter the full corporate name of the applicant.

Applicant BA Code

Enter the 4-digit business associate (BA) code issued to your company by the ERCB.

Step 2: Participant Involvement Requirements

*If you check a **BOLD** response, you must attach supporting information.*

1. Consultation and notification requirements have been met: Public

YES means all applicable requirements as outlined in Tables 6.1 and 6.2 and in the participant involvement requirements of Section 2, Section 6.8, and *IL 82-11* have been met prior to application submission.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met. This includes being unable to contact a party or receive confirmation of nonobjection, as required.

If **NO**, you must attach

- the participant involvement summary of all personal consultation and notification that has been completed;
- the name, address, telephone number, and legal land description of participants for which personal consultation and notification requirements have not been completed;
- a detailed explanation of why all personal consultation and nonobjection requirements cannot be completed;
- a detailed explanation of why all notification requirements cannot be completed; and
- an explanation of how you would like the ERCB to proceed with this application.

The ERCB will review the circumstances and decide if an exemption is warranted.

1. Consultation and notification requirements have been met: Industry

YES means all operators of similar pipelines/pipeline installations within your area of investigation have been notified in accordance with the participant involvement requirements of Section 2 and Section 6.8 and the proliferation requirements of Section 6.9.25 prior to application submission.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach

- a record of contact with industry parties conducted;
- copies of correspondence between parties;
- minutes of meetings held;
- copies of information distributed;
- a summary of parties for which industry notification have not occurred
- a detailed explanation of why all industry notification requirements were not completed; and
- an explanation of how you would like the ERCB to proceed with this application.

The ERCB will review the circumstances and determine if an exemption is warranted.

2. There are outstanding concerns/objections related to this application.

YES means members of the public and/or industry have outstanding concerns/objections.

If **YES**, you must attach

- name, address, telephone number, and legal land description of the party with outstanding concerns/objections;
- a copy of written concerns/objections received, if available;
- a chronology of the participant involvement program conducted with the party;
- a discussion of how you would like the ERCB to proceed with your application;
- steps taken to mitigate the outstanding concerns/objections;
- a copy of the project-specific information package provided; and
- a list of other documents distributed.

If there are residents within the EPZ, you must also attach

- the assessment of existing infrastructure required by Section 8.3.2;
- the updated expanded project-specific information package described in Section 8.3.2; and
- a copy of an area plan described in Section 8.3.3 if it was completed

YES also means the proposed pipeline is located within the Tier 1 area of Battle Lake and the documentation required by Section 8 is attached.

	The ERCB will review the concern/objection identified and determine if an exemption is warranted. NO means there are no outstanding public and/or industry objections/concerns.
3a. Distance to nearest residence.	Enter the distance from any point on any pipeline being applied for to the nearest residence in kilometres (km) to 2 decimal places. For remote locations you may record the distance to the nearest urban centre. This distance should not be less than the distance to the nearest surface development.
3b. Distance to nearest surface development (pipeline installations only).	Enter the distance to the nearest surface development in kilometres (km) to 2 decimal places.

Step 3: Emergency Response Planning

1. The applicant will meet ERCB requirements for emergency response planning.	YES means the corporate or specific emergency response plan (ERP) will meet the requirements of *Directive 071*.
2a. The pipeline requires a new emergency response plan.	YES means a new ERP is required. NO means a new ERP is not required.
2b. The pipeline requires an amendment to an existing emergency response plan.	YES means an existing ERP will be amended to include this pipeline. NO means the existing ERP will not be amended.
3a. Maximum calculated emergency planning zone.	Enter the maximum calculated emergency planning zone radius in km to 2 decimal places, as determined by the requirements of *Directive 071*.
3b. Number of surface developments in the emergency planning zone	Enter the total number of surface developments located within the maximum calculated emergency planning zone.

Step 4: Type of Application

Choose the appropriate box. You may choose more than one, provided the activities are for the same licence.

Category Type	For each Schedule 3 attached, enter the applicable category type from Table 6.1.
New construction	Check this box if you are applying for new pipeline construction.
New pipeline installation (Section 6.9.23)	Check this box if you are applying for a new pipeline installation.
Temporary surface pipeline (1 year maximum) (Section 6.9.11)	Check this box if you are applying for a temporary surface pipeline in continuous use for more than 21 days. Temporary pipelines expire after one year. At that time you must

	either remove the pipeline or submit a new application for a buried pipeline.
In use until	Enter the date the temporary surface pipeline will be shut in and removed. This date must not be more than 1 year from the date of application.
Licence amendment	Check this box if you are applying to change the operating parameters of an existing pipeline (e.g., H_2S increase, liner installation).
Licence number	If you are adding to or amending an existing licence, enter the ERCB licence number.

Step 5: New Construction/Addition Only

Complete this section only if you are constructing a new system or adding a pipeline to an existing licence.

New pipeline licence	Check this box if you are applying for a new licence and you have determined that there is no appropriate licence to which your pipeline can be added.
Addition to existing licence	Check this box if you are adding a new pipeline to an existing licence. The proposed pipeline must transport the same substance as the existing pipeline and be part of the same system.
Licence number	If you are adding to an existing licence, enter the ERCB licence number.

Step 6: Licence Amendment Only

Complete this step only if you are amending an existing pipeline. Choose all that apply to your amendment.

If you check a ***BOLD*** *response, you must attach supporting information.*

MOP increase (Section 6.9.15)	Check this box if you are applying to increase the maximum operating pressure.
MOP decrease (Section 6.9.16)	Check this box if you are applying to decrease the maximum operating pressure.
Resumption (Section 6.9.8)	Check this box if you are applying to resume operation of a pipeline or part of a pipeline that has been discontinued or abandoned or that has not been in active flowing service within the last 12 months.
Discontinuation (Section 6.9.5)	Check this box if you are advising the ERCB that operation of an existing pipeline has been discontinued.

Abandonment (Section 6.9.6)	Check this box if you are advising the ERCB that an existing pipeline has been abandoned.
Removal (Section 6.9.9)	Check this **bold** response if you are applying to remove an entire pipeline, including crossings of roads, railways, and water courses. You must attach an explanation of the circumstances, documentation detailing that the entire pipeline, including water, rail, and road crossings, is being removed, and confirmation that notification requirements have been met. The ERCB will review the circumstances and decide if an exemption is warranted.
Not constructed	Check this box if you are advising the ERCB that the pipeline will not be constructed.
Flow reversal	Check this box if you are applying to reverse the flow of the pipeline.
H_2S increase	Check this box if you are applying to increase the H_2S content of a pipeline licence.
H_2S decrease	Check this box if you are applying to decrease the H_2S content of a pipeline licence.
Other (specify)	Check this box for all licence amendments other than those listed. Specify the type of amendment in the space provided.
Liner installation	Check this box if you are applying to install a liner in an existing pipeline.
Liner type (Section 6.9.18)	If you are installing a liner, choose the box that describes the type of liner. If you select **Other** (specify), you must specify the type of liner, submit a product specification sheet for the grade of liner material to be installed, and attach a detailed explanation. The ERCB will review the circumstances and decide if an exemption is warranted.
Substance change (Section 6.9.17)	Check this box if you are applying to change the substance of an entire pipeline licence or specific line(s) of a pipeline licence. You need to fill out both the "From" and "To" licence numbers and substance codes.
From licence number **Substance code**	Enter the licence number and the substance code of the pipeline system you are applying to change or the licence you are deleting the lines from. (See Table 6.6: Substance Categories for the appropriate code.)
To licence number **Substance code**	Enter the licence number and substance code for the pipeline system to which you are applying to add the new lines. If the "To" licence will be a new licence, leave it blank.

If the substance of the entire licence is to be changed, complete and attach a Schedule 3 and Schedule 3.1 for the "To" licence (new substance) only.

If the substance of a specific line(s) is to be changed, complete and attach a Schedule 3 and Schedule 3.1 for both the "From" and "To" licence numbers.

Step 7: Technical Considerations

*If you check a **BOLD** response, you must attach supporting information.*

1. H_2S content.

Enter the maximum H_2S content (mol/kmol) to 2 decimal places under the pipeline licensed MOP conditions. Enter zero if no H_2S is present.

2. Partial pressure or effective partial pressure of the H_2S. (Section 6.9.19)

Enter the partial pressure (kPa) or effective partial pressure to 2 decimal places. Enter zero if no H_2S is present. Partial pressure or effective partial pressure is used in CSA Z662 to determine need for sour service.

3. The pipeline meets all current applicable CSA Z662 standards. (Sections 6.9.20 and 6.9.21)

YES means that the pipelines in this application are covered by the current CSA Z662 standards and meet all applicable requirements.

YES also means that for existing multiphase pipelines with a partial pressure between 0.30 and 70 kPa only, where the amendment does not increase the partial pressure above 70 kPa, the pipeline meets the CSA Z662 standard.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met or that the application is for a Category C or D surface pipeline for purposes other than well testing or that CSA Z662 standards do not apply for the category type of the pipeline.

If **NO**, you must attach

- a detailed explanation of what CSA Z662 standards are not being met and why;
- a detailed technical assessment that demonstrates how design, construction, and operational considerations have addressed public safety and environmental concerns; and
- all applicable audit documentation (see Section 6.10.7.3 and Table 6.4).

If the application is for a Category C or D surface pipeline, you must attach

- a detailed technical assessment that demonstrates how design, construction, and operational considerations described in Section 21 of the *Pipeline Regulation* will be met;
- a detailed explanation of the pipeline design, including consideration of the effects on downstream pipelines and compatibility with connecting pipelines;

- a description of the measures taken to protect the surface pipeline from third-party damage;
- information on the corrosion control, monitoring program, and mitigation measures for the proposed surface pipeline, including assessing any impacts that adding and later removing the flow may have on the flow regimen of the connecting pipelines; and
- an explanation detailing the need for the surface pipeline.

The ERCB will review the circumstances and decide if an exemption is warranted.

4. Prior to operation, procedures for corrosion mitigation, monitoring, evaluation, and record keeping will be implemented.

YES means you have established and will be implementing suitable internal and external corrosion mitigation, monitoring, evaluation, and record-keeping procedures in accordance with the requirements of the current CSA Z662 standard, Section 9, and the *Pipeline Regulation*, Section 53.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach

- a detailed explanation of why a corrosion program is not being implemented;
- a detailed technical assessment that demonstrates why the requirements of the current CSA Z662 Standard and the *Pipeline Regulation* are not being met; and
- all applicable audit documentation (see Section 6.10.7.4).

The ERCB will review the circumstances and decide if an exemption is warranted.

N/A means that the corrosion control procedures required by the current CSA Z662 standard and the *Pipeline Regulation* do not apply, as the pipeline is noncorrosive (e.g., fibreglass, composite, or polymer pipe).

5. The liquid hydrocarbon pipeline meets current leak detection requirements.
(Section 6.9.3)

YES means the pipeline has been designed and will be operated to meet the current requirements outlined in CSA Z662, Annex E.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach a detailed explanation of why the leak detection requirements will not be met.

The ERCB will review the circumstances and decide if an exemption is warranted.

N/A means the proposed pipeline is not transporting the applicable liquid hydrocarbon products.

6. The design of the steam distribution line is registered with ABSA.
(Section 6.9.4)

YES means that the steam distribution line is considered to form a part of a "pressure piping system" under the *Safety Codes Act*, its design satisfies the requirements of CSA Z662, Clause 14.0, and the design will be registered with ABSA in accordance with the *Design, Construction and Installation of Boilers and Pressure Vessels Regulations*, Section 7(2), using Form AB-96.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach a detailed explanation of why the design requirements will not be met. The ERCB will review the circumstances and decide if an exemption is warranted.

N/A means that this pipeline is not a steam distribution line.

7. Production streams with different H_2S contents will be blended.
(Section 6.9.24)

YES means that you intend to combine production streams for the purpose of maintaining a lower H_2S content in the final blended stream so that it may be transported within the licensed service conditions of the receiving pipeline.

If **YES**, you must attach a detailed description of two independent techniques, as described in Section 6.9.24, to ensure that the licensed H_2S content in the receiving pipeline is not exceeded. This must include

- a detailed description of the design for flow ratio control with or without automatic shutdown; and
- a detailed description of H_2S monitoring (or flow ratio control) with automatic shutdown.

The ERCB will review the circumstances and decide if the measures are appropriate.

NO means that you are not blending product streams.

8. The pipeline installation meets all applicable standards.
(Section 6.9.23)

YES means the pipeline installation will meet all applicable requirements in accordance with Section 6.9.23.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach

- a detailed explanation of what requirements are not being met and why;
- a detailed technical assessment that demonstrates how design, construction, and operational considerations have addressed public safety and environmental concerns; and
- all applicable audit documentation (see Section 6.10.7.8 and Table 6.4).

The ERCB will review the circumstances and decide if an exemption is warranted.

N/A means that you are not applying for a pipeline installation.

Step 8: Natural Gas/Oil Effluent Pipelines > 10 mol/kmol H_2S

Complete this step only if natural gas or oil effluent containing > 10 mol/kmol of H_2S is being transported.

If you check a ***BOLD*** *response, you must attach supporting information.*

1. H_2S release volume – proposed or existing

Enter the proposed or existing total H_2S release volume for the pipeline segment you are constructing or amending.

If there are multiple segments, identify the H_2S release volume for the highest segment.

If your application involves the blending of substances, you may apply for an H_2S level that reflects the blended composition of the various streams contributing to the natural gas transported in the pipeline segment.

Level designation

Enter the level designation for the proposed or existing pipeline as stated in Table 6.3.

Table attached

Check this box if you are applying for multiple pipeline segments and are attaching a table listing the proposed or existing H_2S release volumes and the level designation for each segment.

2. This application will change the level designation of this pipeline or a connecting pipeline.

YES means the level of the existing pipeline or any connecting pipeline will change and the blending of the various streams contributing to the natural gas transported in the pipeline segment was not considered.

If **YES**, you must attach

- representative tie-in schematics of ESD valves;
- a map showing the levels for the pipeline system and indicating the pipeline segments that are being revised, including those where the level was determined by considering the blending of the various streams contributing to the natural gas transported in the pipeline segment—the map should include all residences and other developments within the notification distances;
- the input parameters used to calculate the potential release volume of all affected segments;
- documentation that confirms that all personal consultation and notification requirements have been met for all affected pipeline segments and that a revised ERP, if required, has been submitted; and
- a system map showing ESD and check valve locations.

The ERCB will review the circumstances and decide if an exemption is warranted.

NO means the existing H_2S level will not change.

3. The setback requirements have been met.

YES means setback requirements have been met, as outlined in Table 6.3.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach

- a detailed explanation of why the setback requirements have not been met; and
- a map showing all residences and other developments within the notification distances and indicating where setbacks have not been met.

The ERCB will review the circumstances and decide if an exemption is warranted.

4. The pipeline will inject natural gas containing H_2S into a producing reservoir.
(Section 6.9.21)

YES means this pipeline will be used to inject natural gas containing >10 mol/kmol H_2S into a producing oil and/or gas reservoir.

If **YES**, you must submit

- a detailed explanation that accounts for the effect the reservoir fluid composition may have on injection or producing wells and producing pipelines;
- a detailed plan of steps that need to be taken to reclassify existing wells and pipelines; and
- evidence that the potential for gas cap breakthrough has been evaluated.

The ERCB will review the circumstances and decide if the measures are appropriate.

NO means this is not an injection pipeline or that it is not injecting into a producing reservoir.

Step 9: Substance Change, H_2S Increase, MOP Increase, and Liner Installation Only

Complete this step only if you are applying for a pipeline licence amendment.

*If you check a **BOLD** response, you must attach supporting information.*

1. The presence of H_2S and/or an increase in MOP will reclassify the pipeline to Category C or D.
(Sections 6.9.15 and 6.9.16)

YES means the introduction or increase of H_2S or the MOP increase causes an H_2S partial pressure increase, changing the pipeline category from B to C or D. If so, the pipeline and associated steel materials must meet sour service materials specifications.

Or **YES** means that the pipeline is presently Category C and will be reclassified to Category D (except HVP).

If **YES** and changing from Category B to C or D, you must attach

- details of any required material testing or documentation confirming material and component suitability for sour service;
- evidence that weld procedures are suitable for service conditions;
- evidence demonstrating that weld testing requirements have been satisfied;

- evidence demonstrating that hydrostatic testing requirements have been satisfied;
- a detailed explanation of the compatibility with connecting pipelines; and
- an engineering assessment demonstrating compliance with the sour service requirements of the current edition of CSA Z662. Refer to the document *Reference Tool for Sour Service Conversion of Existing Carbon Steel Pipelines*, found on the *Directive 056* Web page.

If **YES** and changing from Category C to D, you must attach

- an engineering assessment following the additional criteria for sour service conversions involving gas with greater than 10 moles of H_2S gas per kilomole of natural gas and demonstrating pipeline integrity, as described in the Reference Tool for Sour Service Conversion of Existing Carbon Steel Pipelines, found on the *Directive 056* Web page.
- Evidence demonstrating that hydrostatic testing requirements have been satisfied; and
- A detailed explanation of the compatibility with connecting pipelines.

The ERCB will review the circumstances and decide if the measures are appropriate.

NO means the increase in the MOP and/or H_2S will not cause reclassification of the pipeline to Category C or D.

N/A means that H_2S is not a component of the product transported.

2. The liner is being installed due to internal corrosion, external corrosion, or other.
(Section 6.9.18)

Check all applicable boxes.

For **Other**, you must specify the reason by attaching a detailed explanation, as well as the liner specifications and pressure test charts.

The ERCB will review the circumstances and decide if an exemption is warranted.

Step 10: Resumption, Discontinuation, and Abandonment Only

Complete this step only if you are applying to resume operation of a pipeline or advising the ERCB of discontinuation or abandonment operations that have been completed.

If you check a ***BOLD*** *response, you must attach supporting information.*

1a. The pipeline you are applying to resume operation of was discontinued in accordance with ERCB requirements.
(Section 6.9.8)

YES means the pipeline was discontinued in accordance with the requirements of the *Pipeline Regulation.*

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met or that the pipeline was abandoned.

If **NO**, you must attach

- detailed information confirming the pipeline's integrity (internal and external);
- a comprehensive engineering assessment that supports the resumption; and
- documentation as specified in the Pipeline Applications—Checklist for Minimum Technical Requirements (6.7.1).

If the pipeline is abandoned, you must attach documentation that demonstrates personal consultation, confirmation of nonobjection, and that notification requirements have been met for all directly affected parties along the entire right-of-way and those affected by the setbacks.

The ERCB will review the circumstances and decide if an exemption is warranted.

Abandoned pipelines are not normally candidates for resumption-of-operation licensing. A licence may be granted, but only in rare and exceptional circumstances if the applicant has supported the request with a comprehensive engineering assessment.

1b. The integrity of the discontinued pipeline has been verified.

YES means you have verified the integrity of the discontinued pipeline.

NO means you have not undertaken all necessary work to verify the integrity of the discontinued pipeline due to exceptional circumstances.

If **NO**, you must attach

- an explanation of why the necessary work to verify the integrity of the pipeline has not been undertaken; and
- documentation as specified in the Pipeline Applications—Checklist for Minimum Technical Requirements (6.7.1).

The ERCB will review the circumstances and decide if an exemption is warranted.

2. The pipeline was discontinued in accordance with ERCB requirements.
(Section 6.9.5)

YES means the pipeline was discontinued in accordance with the requirements of the *Pipeline Regulation*.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach an explanation of why the pipeline was not discontinued in accordance with the applicable ERCB requirements.

The ERCB will review the circumstances and decide if an exemption is warranted.

3. The pipeline was abandoned in accordance with ERCB requirements. (Section 6.9.6)	YES means the pipeline was abandoned in accordance with the requirements of the *Pipeline Regulation*, including the removal of all surface equipment related to the pipeline that will no longer be in use. **NO** means that due to exceptional circumstances, all applicable requirements as cited above have not been met. If **NO**, you must attach an explanation of why the pipeline was not abandoned in accordance with the applicable ERCB requirements. The ERCB will review the circumstances and decide if an exemption is warranted.
4. In case of abandonment, all associated surface facilities will be removed and the surface site reclaimed within 1 year.	YES means all facilities that will no longer be in service associated with the abandoned pipeline will be removed and the surface site reclaimed within 1 year. NO means the associated facilities will not be removed and the site will not be reclaimed due to exceptional circumstances or because the facility is still in use.

Step 11: Environmental Requirements

*If you check a **BOLD** response, you must attach supporting information.*

1. The pipeline will be constructed in accordance with AENV's *Environmental Protection Guidelines*.	YES means all requirements of the *Environmental Protection Guidelines* issued by AENV have been met. N/A means new construction is not taking place.
2. The applicant will comply with the *Code of Practice* in accordance with the *Water Act*.	YES means you will notify AENV as required by the *Water Act*. The *Code of Practice* applies to both mapped and unmapped water bodies. Due to the large scale of the maps, there are many water bodies that are not shown on the maps. The *Code of Practice* outlines how the class of an unmapped water body is determined. N/A means there is no water crossing involved.
3. Application has been made to AENV for Conservation and Reclamation Approval (white area only).	YES means you have determined that Conservation and Reclamation (C&R) Approval is required under the AENV *Environmental Protection and Enhancement Act* (EPEA) and have applied to AENV (white area only). If the application has been advertised, enter the notice expiry date. Routine applications submitted prior to this expiry date will be closed. **NO** means you have determined that a C&R Approval is required but have not applied for it. If **NO**, you must attach a detailed explanation of why the required C&R approval has not been applied for. The ERCB will review

	the circumstances but will not approve the application until C&R approval is granted. N/A means the pipelines are AENV Class II and a C&R Approval is not required.
4. The proposed pipeline/ installation is located within the Calgary or Edmonton Transportation/Utility Corridor. (Section 6.9.12)	YES means the proposed pipeline/pipeline installation is located within the Calgary or Edmonton Transportation/Utility Corridor. NO means the proposed pipeline/pipeline installation is not located within the Calgary or Edmonton Transportation/Utility Corridor.
4a. If YES, the pipeline/installation has Ministerial Consent from Alberta Infrastructure.	YES means the pipeline/pipeline installation has received Ministerial Consent from Alberta Infrastructure. **NO** means the pipeline/pipeline installation has not received Ministerial Consent from Alberta Infrastructure. If **NO**, you must attach a detailed explanation of why Ministerial Consent has not been received. The ERCB will review the circumstances and decide if an exemption is warranted. N/A means new construction is not taking place.
5. The proposed pipeline/pipeline installation meets ERCB environmental requirements	YES means the proposed facility meets all applicable ERCB environmental requirements. **NO** means the facility does not meet all applicable ERCB environmental requirements. **NO** also means the facility is located within the Eastern Slopes (Southern Portion), as defined by *IL 93-09*. If **NO**, you must attach a detailed explanation of why the facility does not meet ERCB environmental requirements and what measures will be in place to ensure that the facility will not have a negative impact on the environment. If the facility is located within the area affected by *IL 93-09*, you must attach all material required by that IL.

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 3.1

Pipeline Segment/Pipeline Installation Identification

DAY MONTH YEAR ☐☐☐☐☐☐☐☐☐

EUB APPLICATION NUMBER ☐☐☐☐☐☐☐

APPLICANT'S REFERENCE ____________________

1. PIPE SPECIFICATION/SUBSTANCE

Substance________________ Code__________ H_2S (mol/kmol)__________ Licence Number P ______________

ID NO.	OUTSIDE DIAMETER (mm)	WALL THICKNESS (mm)	MAT.	TYPE	GRADE	MOP (kPa)	STRESS LEVEL	JOINTS	IP
01									
02									
03									
04									
05									

2. PIPE LOCATION AND STATUS

ACD	LINE NO.	FROM LOCATION					FC	TO LOCATION					FC	LENGTH (km)	STATUS	ENVIR	ID NO.
		LSD	SEC	TWP	RGE	M		LSD	SEC	TWP	RGE	M					

3. INSTALLATION SPECIFICATION

ACD	INST. NO.	LOCATION					INST. TYPE	COMPRESSOR/ PUMP RATING (kW)	DRIVER POWER SOURCE	STATUS
		LSD	SEC	TWP	RGE	M				

FAC-06-2008-10F

Energy Resources Conservation Board Facilities Applications 640 – 5 Avenue SW, Calgary Alberta T2P 3G4

6.11.2 How to Complete Schedule 3.1: Pipeline Segment/Pipeline Installation Identification

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2007).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Pipe Specification/Substance

Substance	Enter the category name of the substance from Table 6.6. (Tables 6.6 to 6.10 are at end of this section.)
Code	Enter the substance code from Table 6.6.
H_2S	Enter the maximum H_2S content in the gaseous phase in moles per kilomole (mol/kmol).
Licence Number	Enter the licence number of the pipeline or pipeline installation.
Outside Diameter	Enter the outside diameter of the pipeline in millimetres (mm) to 1 decimal place.
Wall Thickness	Enter the pipe nominal wall thickness in mm to 2 decimal places.
Material	Enter the code for the pipe material from Table 6.7.
Type and Grade	Enter the codes for the type and grade of material for the pipeline from Tables 6.8, 6.9, 6.10, and 6.11.
Maximum Operating Pressure (MOP)	Enter the MOP of the pipeline rounded to the nearest 10 kilopascals (kPa).
Stress Level (Section 6.9.22)	Enter the calculated stress level of the pipeline.
Joints	Enter the code for the type of joint from Table 6.12.
Internal Protection (IP)	Enter the internal protection code from Table 6.13.

Step 2: Pipe Location and Status

ACD	Enter the applicable code: A – when adding a new line number to a new or existing licence C – when making changes to an existing pipeline where pipe specifications are changing and all pipelines where the line location and/or status are changing D – when deleting pipelines from a licence for substance change or if the pipeline will not be constructed
Line Number	Enter the line number of the pipeline. If you are adding pipelines to an existing licence, use the next available line number on the licence.
From Location	Enter the legal description of the starting point of the pipeline according to the direction of flow.

Facility Code (FC)	Enter the facility code for the starting point of the pipeline from Table 6.14.
To Location	Enter the legal description of the terminating point of the pipeline.
Facility Code (FC)	Enter the facility code for the end point of the pipeline from Table 6.14.
Length	Enter the length of the pipeline in kilometres (km) to 2 decimal places.
Status	Enter the appropriate status code from Table 6.15.
Environment	Enter the environment code from Table 6.16, if applicable. A creek, lake, or river designation code must be entered if it appears on the current Provincial Base Map 1:1 000 000. The *Code of Practice* applies to both mapped and unmapped water bodies. Due to the large scale of the maps, there are many water bodies that are not shown on the maps. The *Code of Practice* outlines how the class of an unmapped water body is determined.
Identity Number (ID)	This is used as a cross-reference for Step 1: Pipeline Specification/ Substance.

If replacing a portion of pipeline 100 m or greater, a pipeline licence application is required.

Step 3: Installation Specification

ACD	Enter the applicable code: A – when adding a new installation to a new or existing licence C – when making changes to an existing installation where specifications are changing D – when deleting an installation from a licence or if the installation will not be constructed
Installation Number	Enter the pipeline installation number. If you are adding a pipeline installation to an existing pipeline licence, use the next available installation number on the licence.
Location	Enter the legal description of the pipeline installation.
Installation Type	Enter the type of installation from Table 6.17.
Compressor/Pump Rating (kW)	If you are constructing a compressor or pump station, enter the kilowatt (kW) rating.
Driver Power Source	Enter the compressor/pump driver power source from Table 6.18.
Status	Enter the appropriate status code from Table 6.19.

Table 6.6. Substance categories*

Substance	Substance category	Code	Priority code
Natural gas with >10 mol/kmol of H_2S content	Sour natural gas	SG	1
Butane, ethylene, propane, pentanes, liquid ethane	HVP products	HV	2
Condensate, diesel fuel, gasoline, heating oil, hydrocarbon diluents, kerosene, solvents	LVP products	LV	3
Blended crude bitumen, crude oil, synthetic crude oil	Crude oil	CO	4
Multiphase fluids	Oil well effluent	OE	5
Methane, natural gas with ≤ 10 mol/kmol of H_2S content	Natural gas	NG	6
Fuel gas	Fuel gas	FG	7
Produced water	Salt water	SW	8
Ammonia, caustic, glycol, methanol, polymer, sulphur, carbon dioxide	Miscellaneous liquids	ML	9
Air, ammonia, carbon dioxide, ethane, helium, hydrogen, nitrogen, steam	Miscellaneous gases	MG	10
Potable water, surface water	Fresh water	FW	11

*Use OE for pipelines transporting production from oil wells and where a liquid stream is separated from a gas stream at a gas well. Applications that involve blending substances from different categories such as NG and OE will be reviewed case by case.

Table 6.7. Pipe material codes

Pipe material	Code
Aluminum	A
Composite	G
Fibreglass	F
Polyethylene	P
Polyvinyl chloride	V
Steel	S

Table 6.8. Steel pipe codes (examples only)

	Code	
Pipe specification	Type	Grade
API 5L Grade A	5L	A
API 5L Grade B	5L	B
API 5L Grade X42	5L	X42
API 5L Grade X60	5L	X60
ASTM A53 Grade B	A53	B
ASTM A 106 Grade B	A106	B
ASTM A333 Grade 6	A333	6
CSA Z245.1 Grade 241 Category I	Z245.1	241 1
CSA Z245.1 Grade 290 Category II	Z245.1	290 2
CSA Z245.1 Grade 359 Category III	Z245.1	359 3
ASTM A539	A539	N/A *

* Not applicable for ASTM A539.

Table 6.9. Aluminum pipe codes (examples only)

Pipe specification	Code	
Aluminum Association Alloy No.	Type	Grade*
6063 T1A	6063	T1A
6063 T1B	6063	T1B

* If cladded aluminum, add C at the end of Grade Code (e.g., T1AC).

Table 6.10. Fibreglass and fibre-reinforced composite pipe codes (examples only)

	Code	
Pipe specification	**Type**	**Grade**
Ameron Bondstrand 3000	AMERON	3000
Star Fibreglass 500	STAR	500
Centron 800	CEN	800
Fibrespar 1500 E	FSLP	1500
Hydril ANSI 300	HDLP	300
Flexpipe ANSI 300	FPLP	750

Table 6.11. Polyethylene pipe codes (examples only)

Pipe specification	**Code**	
Aluminum Association Alloy No.	**Type**	**Grade**
PE 2406 SDR 11	2406	11
PE 3408 SDR 9	3408	9

Table 6.12. Joint codes

Joint	Code
Thru-Kote Welded	A
Butt Fusion	B
Bonded	C
Flanged	F
Solvent Welded	G
High Energy Welded	H
Crimp Kote	K
Sure Lok	L
Mechanical Coupling	M
Pronto Lock	P
Socket Fusion	S
Threaded	T
Welded	W
Zap-Lok	Z
Twin Lock	E
Triple Seal	R

Table 6.13. Internal protection codes

Protection type	Code
Uncoated	U
Thin Film	T
Cement	C
Expanded Polyethylene	E
Grouted	G
Free Standing	L

Table 6.14. Facility codes

Facility	Code
Battery	B
Blind End	BE
Chemical Plant	CP
Compressor Station	CS
Consumer	CO
Creek	CK
Experimental Station	ES
Gas Processing Plant	GP
Injection/Disposal Facility	IP
Lake	LA
Oil Loading and Unloading Terminal	LR
Meter/Regulation Station	MR
Meter Station	MS
Petrochemical Plant	PP
Pipeline	PL
Pipeline Terminal	PT
Pump Station	PS
Refinery	RF
Regulator Station	RS
Reservoir	RE
River	RI
Satellite	S
Storage Cavern	SC
Storage Tank	ST
Tank Farm	TF
Well	WE
Line Heater (Category C or D)	LH

Table 6.15. Status codes

Status	Code
Abandoned	A
Discontinued	D
Operating	O
Removed	R
To Be Constructed	P

Table 6.16. Environment codes

Crossing	Code
Creek	CC
Lake	LC
Overhead	OC
River	RC
Surface (surface line)	SC

Table 6.17. Pipeline installation codes

Facility	Code
Pump Station	PS
Compressor Station	CS
Tank Farm	TF
Line Heater (Category C or D)	LH
Oil Loading and Unloading Terminal	LR

Table 6.18. Driver power source codes

Facility	Code
Natural Gas	N
Electric	E

Table 6.19. Status codes for pipeline installations

Status	Code
Operating	O
Removed	R
To Be Constructed	P

Section 7 Well Licence Applications (Schedule 4)

7.1 Overview

An applicant must use Schedule 4 to apply for a well licence application for

- a new oil, gas, or crude bitumen well,
- a water well greater than 150 m,
- a new disposal or injection well,
- re-entering a well,
- resuming drilling operations after original rig release,
- an evaluation well or test hole,
- a coalbed methane well,
- drilling a well through a potential hydrocarbon zone for any other purpose,
- amending a previously issued well licence prior to spud or rig release,
- deepening an existing well while the rig is on hole, or
- changing an oil sands evaluation well to a conventional producing well (within 30 days of drilling).

Depending on the project, the applicant must submit one Schedule 1 along with one or more of the following forms:

- Schedule 4: Well Licence Application
- Schedule 4.1: Working Interest Participants—Wells
- Schedule 4.2: Multiwell Pad Location
- Schedule 4.3: Well H_2S Information

For wells that will be drilled deeper than 150 m to supply water for domestic or stock watering purposes, a well licence application is required. Please contact ERCB Facilities Applications for details and instruction.

Approvals for abandoned well remediation do not require a *Directive 056* application. Companies responsible for the re-entry, repair, and reabandonment of a well must submit a request to the Corporate Compliance Well Operations Group, indicating the reason for the re-entry, a plan for resolution of the issue, and a statement regarding whether or not the company has the mineral rights. If the request is approved, Facility Applications will issue a letter of approval, giving the company 60 days to complete the operations.

7.2 Project Submissions

A project is defined as a network of facilities, pipelines, and/or wells that connect to a common facility. A project submission may consist of the consecutive submissions of related single licence applications or the single submission of multiple licence applications for related facilities, pipelines, and wells. The ERCB encourages applicants to identify related applications that are part of the same project through the use of a common reference number in the Applicant's Reference section.

Numbered statements represent requirements and expectations (see Section 1.4).

1) If the applicant is filing a project submission,

a) the application must be submitted under one company name using one Schedule 1, and

b) the applicant must complete a separate Schedule 4 for each well in the project, unless it is a multiwell pad project.

7.3 Licence Expiry

Well licences expire one year from the date of issue if construction or operation has not yet started. After one year, the ERCB will cancel the expired licence from the active records.

2) If the applicant intends to proceed with a project for which a licence has expired, all applicable regulatory requirements, including participant involvement requirements (Section 2), must be fulfilled prior to filing a new application.

Due to the complexity of some developments, it is possible that the applicant may not be able to act on a licence before the expiry date. If licence expiry is imminent, the applicant should contact Facilities Applications for advice on how best to proceed.

3) Prior to initiating new construction when a licence is nearing expiry, the applicant must conduct a new resident/landowner search and determine if any new issues may have arisen since the licence was granted.

4) The applicant must advise Facilities Applications 30 days before licence expiry if it has commenced lease construction but has not spudded the well. This will ensure that the licence is not automatically cancelled.

5) If an applicant does not intend to proceed with the licence, it must notify Facilities Applications.

7.4 Category Type and Consultation and Notification Requirements

The types of wells requiring a licence under *Directive 056* are listed in Table 7.1, along with respective consultation and notification requirements. The category type of a well is determined by the H_2S content, H_2S release rate, and proximity to the public.

6) The applicant must identify the correct category type for the proposed well project and perform all associated consultations and notifications.

7) For wells containing H_2S, the applicant must base the category type on the maximum wellhead, cumulative drilling, producing, or completion H_2S release rate. Applicants must review available production data and consider future production operations that may result in a reservoir originally not containing H_2S gas evolving to gas containing H_2S.

7.5 Exemptions

Well licence applications are not required for

- wells drilled to a depth of less than 150 m that are not intended to encounter or produce hydrocarbons, and
- wells drilled to discover or evaluate a solid inorganic mineral (e.g., limestone quality test well).

Table 7.1. Well category type and consultation and notification requirements

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
B	Wells 0.00 mol/kmol H_2S	140	Single well	• Landowners and occupants with regard to well-site location • Landowners and occupants with regard to well-site access • Residents within 0.2 km • Residents within 0.3 km, if single oil wells with 0.0 mol/kmol H_2S and continuous flaring	• Crown disposition holders • Local authorities • Freehold coal rights owner or coal rights lessee • Landowners within 0.1 km • Urban authorities within 1.5 km • Unlighted airports within 1.6 km • Lighted airports within 5 km
		141	Commercial or source water well		
		150	Multiwell pad		
C	Wells >0.00 mol/kmol H_2S <0.01 m^3/s H_2S release rate	280	Single well	• Landowners and occupants with regard to well-site location • Landowners and occupants with regard to well-site access • Landowners within 0.1 km with regard to setbacks • Residents within 0.2 km or the EPZ radius, whichever is greater	• Crown disposition holders • Local authorities • Freehold coal rights owner or coal rights lessee • Urban authorities within 1.5 km • Unlighted airports within 1.6 km • Lighted airports within 5 km
		290	Multiwell pad		
	Wells $\geq$ 0.01 m^3/s but < 0.3 m^3/s H_2S release rate	360	Single well		
		370	Multiwell pad		
D	Wells $\geq$ 0.3 m^3/s but < 2.0 m^3/s H_2S release rate	570	Single well	• Landowners and occupants with regard to well-site location • Landowners and occupants with regard to well-site access • Landowners within 0.5 km with regard to setbacks • Residents within 0.2 km or the EPZ radius, whichever is greater	• Crown disposition holders • Local authorities • Freehold coal rights owner or coal rights lessee • Urban authorities within 1.5 km • Unlighted airports within 1.6 km • Lighted airports within 5 km
E	Wells $\geq$ 2.0 m^3/s H_2S release rate (deemed nonroutine)	610	Single well	• Landowners and occupants with regard to well-site location • Landowners and occupants with regard to well-site access • Landowners within 1.5 km with regard to setbacks • Residents, local authorities, and urban authorities within the EPZ	• Crown disposition holders • Freehold coal rights owner or coal rights lessee • Unlighted airports within 1.6 km • Lighted airports within 5 km
	Wells $\geq$ 0.01 but < 0.1 m^3/s release rate and within 0.5 km of urban centre (deemed nonroutine)	620	Proximity critical well	• Landowners and occupants with regard to well-site location • Landowners and occupants with regard to well-site access • Landowners within 0.1 km with regard to setbacks • Residents and local authorities within 0.2 km or the EPZ radius, whichever is greater • Urban authorities within 1.5 km	• Crown disposition holders • Freehold coal rights owner or coal rights lessee • Unlighted airports within 1.6 km • Lighted airports within 5 km

(continued)

Table 7.1. Well category type and consultation and notification requirements (concluded)

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
E	Wells ≥ 0.1 but < 0.3 m^3/s release rate and within 1.5 km of urban centre (deemed nonroutine)	621	Proximity critical well	• Landowners and occupants with regard to well-site location • Landowners and occupants with regard to well-site access • Landowners within 0.1 km with regard to setbacks • Residents and local authorities within 0.2 km or the EPZ radius, whichever is greater • Urban authorities within 1.5 km	• Crown disposition holders • Freehold coal rights owner or coal rights lessee • Unlighted airports within 1.6 km • Lighted airports within 5 km
	Wells ≥ 0.3 but < 2.0 m^3/s release rate and well is within 5.0 km of urban centre (deemed nonroutine)	622	Proximity critical well	• Landowners and occupants with regard to well-site location • Landowners and occupants with regard to well-site access • Landowners within 0.5 km with regard to setbacks • Residents and local authorities within 0.2 km or the EPZ radius, whichever is greater • Urban authorities within 5.0 km	• Crown disposition holders • Freehold coal rights owner or coal rights lessee • Unlighted airports within 1.6 km • Lighted airports within 5 km

7.6 Records Corrections

There are no records corrections for well licences.

7.7 Licence Amendments

8) The applicant must be the licensee to file a well licence amendment.

9) The applicant must be able to demonstrate there are no outstanding concerns/objections to file a well licence amendment.

10) The licensee must file a well licence amendment application if any of the following information changes prior to spudding the well: surface ownership (Freehold and Crown), mineral ownership (Freehold and Crown), surface location, ground elevation, well purpose, surface coordinates, total depth, well type, terminating formation, regulation section, the emergency planning zone (EPZ), or number of occupied dwellings, public facilities, and/or places of business inside the EPZ.

11) The licensee must file a well licence amendment application while the rig is on hole deepening an existing well with no change in the well category or type.

12) The licensee must file a well licence amendment application to correct inadvertent data entry errors or transposition of numbers.

13) The licensee must file a well licence amendment application to change the bottomhole location prior to spudding the well.

    a) Bottomhole location changes after spud date are captured through the submission of the licensee's directional survey.

7.8 Re-entry/Resumption and Deepening

14) The licensee must file a well licence re-entry/resumption application when reentering an abandoned well or resuming drilling of a well after rig release.

15) The licensee must file a well licence deepening application when deepening an existing well while the rig is on hole if that will result in an increase in the well category (e.g., from B to C or C to D; see Table 7.1).

7.9 Participant Involvement Requirements

16) The applicant must ensure that the requirements set out in Section 2 are met for the radius set out in Table 7.1.

    a) In cases where the completion or producing H_2S release rate is greater than the drilling release rate, the applicant must fulfill the personal consultation and notification requirements applicable to the highest rate.

17) The applicant must meet the information requirements as part of personal consultation and notification for all well licence applications (Section 2).

18) The applicant must provide information packages to those persons whose rights may be directly and adversely affected, as set out in Table 7.1, and be prepared to discuss the project as necessary.

    a) If personal consultation is required, the applicant must

        i) provide the project-specific information package—this written information package must meet the information requirements described in Section 2 and include any other information to assist in understanding the proposed development,

        ii) provide the letter from the Chairman of the ERCB,

        iii) provide the ERCB brochure *Understanding Oil and Gas Development in Alberta,*

        iv) provide the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*, and

        v) offer the EnerFAQs listed in the ERCB brochure *Understanding Oil and Gas Development in Alberta,* Appendix 11. These are available from the *Directive 056* Web page.

    b) If notification is required, the applicant must provide the applicant's project-specific information package and the letter from the Chairman of the ERCB and offer copies of

        i) the ERCB brochure *Understanding Oil and Gas Development in Alberta,*

        ii) the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*, and

        iii) the EnerFAQs listed in Appendix 11.

19) If the applicant has obtained a Zero Flaring Agreement (see *Directive 060*), a copy must be submitted with the well licence application.

20) The ERCB does not require applicants to acquire road-use agreements prior to submitting its application; however, they must be in place prior to construction.

21) Applicants must meet the requirements in Section 8.3 when planning sour gas activity where residents are located within the EPZ.

7.10 Technical Requirements

The following are subsections under wells technical requirements and discuss various fields on Schedules 4, 4.1, 4.2, and 4.3.

7.10.1 Survey Plans

22) The applicant must attach a survey plan that

  a) meets all requirements stated in the *Oil and Gas Conservation Regulations* (*OGCR*), Section 2.020;

  b) provides sufficient detail to accurately identify surface topography, surface improvements, and access roads;

  c) is formatted on 8½ x 14 inch paper size (multiple pages of this size may be used to include all survey information; Facilities Applications prefers an original of the survey plan; however, photocopies are accepted if they are clear);

  d) is current and valid:

    i) less than 12 months old from the date of certification, or

    ii) if more than 12 months from the date of certification, certified as correct by an Alberta Land Surveyor;

  e) shows the location of the well tied by bearings and distance to a monument, or in the case of a well in unsurveyed territory, the location determined in accordance with the Alberta Land Surveyors Association *Manual of Standard Practice*;

  f) shows the relation of the well to the boundaries of the quarter section shown by the coordinates from the two boundaries of the quarter section that are also the boundaries of the section (assuming a 20 m wide road allowance) and by calculated distances to the interior boundaries of the quarter section;

  g) shows the relation of the well location to the surface topography within 200 m of the well, including

    i) elevation of the corners of the surface lease,

    ii) elevation of any significant water bodies, and

    iii) sufficient information to establish the general character of the topography and any predominant drainage patterns;

h) in the case of long access roads (i.e., outside the 200 m radius) or where the well is close to survey section lines, shows sufficient information to establish the general character of the topography, predominant drainage patterns, and surface improvements;

i) shows the relation of the well location to

  i) surface improvements,

  ii) wells,

  iii) coal mines, whether working or abandoned, and

  iv) water wells within 200 m of the well; and

j) indicates the depth of the water if the proposed well is in a water-covered area.

k) For new CBM wells completed above the base of groundwater protection, applicants must meet the requirements found in Appendix 13 regarding survey plans and maps.

7.10.2 Emergency Planning Zones

The emergency planning zone (EPZ) for wells containing H_2S is based on the release rate for the well. An emergency response plan (ERP) is required for any well containing H_2S where a surface development (e.g., occupied dwelling, campground) is located within the EPZ. For Category E wells, Facilities Application staff and Emergency Planning and Assessment staff conduct the review of the well licence application and ERP concurrently so that the well licence and the ERP approval are issued together. ERPs should be forwarded directly to the ERCB Emergency Planning and Assessment Section for review. See *Directive 071* for further details on emergency response planning. Applicants are reminded not to submit the confidential portion of the ERP containing personal information about people affected by the EPZ as part of the application for a well licence.

23) All licensees must have a corporate level ERP that addresses the fundamentals of how an emergency situation would be handled.

24) The applicant must ensure that when a site-specific ERP is required, the ERCB Emergency Planning and Assessment Section has approved it prior to commencement of operations.

  a) The EPZ must be determined using the methods described in *Directive 071*.

25) The applicant must record the EPZ radius on Schedule 4.3.

7.10.3 Critical Well

A critical well is defined by the following criteria:

- RR ≥ 2.0 m^3/s,
- RR ≥ 0.3 m^3/s but < 2.0 m^3/s and the well is located within 5.0 km of an urban centre,
- RR ≥ 0.1 m^3/s but < 0.3 m^3/s and the well is located within 1.5 km of an urban centre, or

- RR ≥ 0.01 m^3/s but < 0.1 m^3/s and the well is located within 500 m of an urban centre.

26) If the proposed well is critical by the above standards, the applicant must meet the drilling requirements detailed in *ID 97-06*, *Directive 036: Drilling Blowout Prevention Requirements and Procedures*, and *IRP Volume 1: Industry Recommended Practices for Drilling Critical Sour Wells*.

27) If the proposed well is deemed to be Category E, the applicant must file a nonroutine application.

7.10.4 Minimum Casing Testing Requirements—Re-entry and Resumption of Drilling

27) For all categories of wells with only surface casing set:

   a) Prior to commencing re-entry or resumption of drilling operations, the licensee must

      i) ensure that there is sufficient casing set and cemented in the well for well control purposes (see *Directive 008*), and

      ii) pressure test the existing casing to the lesser of 7000 kPa or 50 times the casing setting depth (m).

   For a satisfactory pressure test, a stabilized pressure must be maintained over a 10 minute interval.

28) For Category B, C, or D wells that will be drilled overbalanced:

   a) prior to commencing re-entry or resumption of drilling operations, the licensee must

      i) ensure that there is sufficient casing set and cemented in the well for well control purposes (see *Directive 008*), and

      ii) pressure test the existing casing to 67 per cent of the bottomhole pressure at the casing setting depth or the depth at which the window will be cut.

   For a satisfactory pressure test, a stabilized pressure must be maintained over a 10 minute interval.

   b) If the existing casing is to be used for production purposes, prior to placing the well on production, the licensee must

      i) run a casing inspection log or combination of logs, fully interpreted on a joint-by-joint basis, which

         - determines the percentage penetration of anomalies,
         - distinguishes between internal and external corrosion, and
         - has the ability to detect holes, pits, perforations, metal loss, and metal thickness,

      ii) use the results of the casing inspection log in the following equation to verify that the minimum internal yield (P_y) of the existing casing meets the minimum required casing burst pressure set out in *Directive 010*:

$$P_y = \frac{(2Y_p\, t)}{D}$$

Where:

P_y = minimum internal yield (kPa)

Y_p = specified minimum yield strength (kPa)

t = reduced wall thickness (mm) (minimum remaining well thickness – not an average)

D = nominal outside diameter (mm),

iii) pressure test the casing to a pressure of 85 per cent of the minimum required casing burst pressure set out in *Directive 010.*

For a satisfactory pressure test, a stabilized pressure must be maintained over a 10 minute interval.

29) For Category B, C, or D wells that are drilled underbalanced and any Category E well:

a) prior to commencing re-entry or resumption of drilling operations, the licensee must

i) ensure that there is sufficient casing set and cemented in the well for well control purposes,

ii) run a casing inspection log or combination of logs, fully interpreted on a joint-by-joint basis, that

- determines the percentage penetration of anomalies,
- distinguishes between internal and external corrosion, and
- has the ability to detect holes, pits, perforations, metal loss, and metal thickness,

iii) use the results of the casing inspection log in equation 28(b)(ii) above to verify that the minimum internal yield (P_y) of the existing casing meets the minimum required casing burst pressure set out in *Directive 010*, and

iv) pressure test the existing casing to 67 per cent of the highest anticipated formation pressure that will be encountered.

For a satisfactory pressure test, a stabilized pressure must be maintained over a 10 minute interval.

b) If the existing casing is to be used for production purposes, prior to placing the well on production, the licensee must

i) run another casing inspection log (this casing inspection log may be a log that has regard for internal wall loss and may be compared to the data from the log conducted prior to drilling [see 28(b)(ii) above],

ii) ensure that the formula set out in 28(b)(ii) is now satisfied based on the least wall thickness remaining,

   iii) ensure that the minimum internal yield (Py) of the existing casing meets the minimum required casing burst pressure set out in *Directive 010*, and

   iv) pressure test the casing to a pressure of 85 per cent of the minimum required casing burst pressure set out in *Directive 010*.

   For a satisfactory pressure test, a stabilized pressure must be maintained over a 10 minute interval.

30) To request a waiver from the required casing inspection logs for a re-entry or resumption of well, the licensee must submit the well licence application as nonroutine and provide confirmation that the well

   a) is not a Category E well,
   b) is not expected to encounter any new pools,
   c) will not be deepened or drilled as a whipstock or directional well,
   d) is not located within or in proximity to enhanced recovery schemes,
   e) has not been re-entered or undergone resumption of drilling operations before,
   f) has surface casing or production/intermediate casing that is cemented and isolated to the base of groundwater protection and there are no usable hydrocarbons remaining open in any uncemented intervals (including coalbed methane),
   g) does not have a surface casing vent flow or have gas migration problems,
   h) is not located in an area that has high incidents of casing corrosion, and
   i) was not originally drilled as a directional or horizontal well.

7.10.5 Terminating Formation

For the purpose of well licensing, the terminating formation is defined as the deepest formation to which the applicant has the right to produce for all intended purposes of the well.

The applicant may drill to a maximum overhole depth of 15 m below the base of the terminating formation. This overhole depth is permitted to accommodate logging tools and casing.

31) The applicant must not include the 15 m overhole formation as the terminating formation on a well licence application unless the applicant holds the mineral rights.

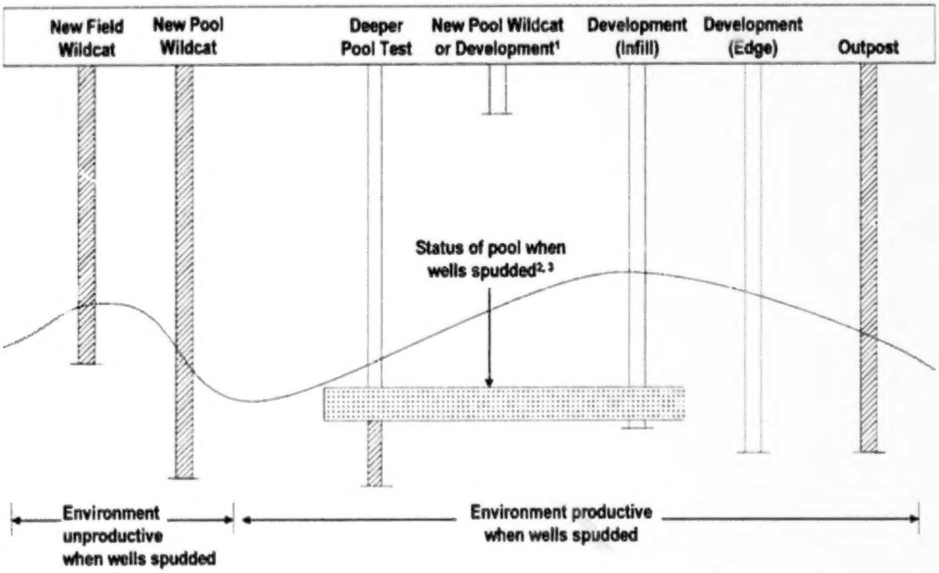
32) The applicant must have the permission of the mineral rights holder, whether Crown or Freehold owner or lessee, to exceed the 15 m maximum overhole depth.

7.10.6 Lahee Classifications

A Lahee classification is a "**pre-spud**" assignment given to each well based on the geological complexities and the known existence of hydrocarbon accumulations (pools) in the area where the well is to be drilled. The classification takes into account the general degree of risk of geological failure. Refer to Table 7.2 for individual classification descriptions and to schematic Figure 7.1.

Table 7.2. Lahee classification

Lahee classification	Description
New Field Wildcat (NFW)	An NFW well is located at a considerable distance beyond the limits of known pools and is outside the boundaries of existing fields. The well is drilled in an area where hydrocarbons have not yet been discovered. The geological risk of this type of well is very high: in the absence of the discovery of a new pool, the well would be deemed unsuccessful.
New Pool Wildcat (NPW)	The objective of an NPW well is the discovery of a new pool(s) in all zones that the well encounters. The well is located in an already discovered field. The geological risk of this type of well is very high: in the absence of the discovery of a new pool, the well would be deemed unsuccessful. In circumstances where the well is in relatively close proximity to the limits of a known pool(s), the NPW classification must be based on technical data suggesting that a new pool will be encountered. A well drilled within or in close proximity to the limits of a known pool(s) but terminating shallower than the known pool(s) is normally classified as NPW, except in the case where pre-existing wells in close proximity to the well have logs and/or tests that strongly suggest the existence of shallower pools to be penetrated by the well.
Deeper Pool Test (DPT)	A DPT well is located within or in close proximity to a known pool(s) and is drilled with the objective of exploring for new, undiscovered pool(s) below the deepest of the known pool(s). Only the interval below the deepest of the known pool(s) is exploratory and carries a high geological risk. The remaining metreage in a DPT is development, with low geological risk. In circumstances where the exploratory portion of the well is in relatively close proximity to the limits of a known pool(s), the DPT classification must be based on technical data suggesting that a new pool will be encountered.
Outpost (OUT)	An OUT well is drilled with the intention of extending a known pool by a considerable distance. A well in proximity to a known pool but whose outcome is uncertain because of geological complexities might also be classified as OUT. There would be some geological risk associated with drilling an OUT well.
Development (DEV)	The objective of a DEV well is to further exploit or extend a known pool(s). The well may be inside of the established limits of the pool or in close proximity to the edge of the pool(s). The DEV classification should be used even if the well is drilled slightly deeper than the target pool, especially where the deeper strata to be penetrated have no hydrocarbon-bearing potential. The geological risk of this type of well is low. Wells licensed with a well type of production and substance of bitumen are DEV.
Re-entry (REN)	A REN classification is assigned to a well that re-enters an existing wellbore for the purpose of recompleting the well as a producer or service well with no new strata being drilled. If new strata are to be drilled (e.g., by deepening, whipstock, or sidetracks), the well is assigned the appropriate Lahee classification.
Development Service Well (DSW)	A DSW well is drilled to introduce fluids into a formation or observe the performance of a reservoir. Water injection, steam injection, and observation wells are examples of DSW wells.
Evaluation Oil Sands (OV)	An OV well is drilled in an oil sands area to evaluate the oil sands and is not intended to produce hydrocarbons. Such wells will be licensed under Section 2.030 of the *OGCR*.
Test Hole (TH)	A TH well is drilled for geological and geophysical stratigraphic evaluation purposes and is not intended to produce or expected to encounter hydrocarbons. Such wells will be licensed under Section 2.030 of the *OGCR*.
Experimental (EX)	An EX well is part of an ERCB-approved experimental scheme. Such wells will be licensed under Section 2.030 of the *OGCR*.
Other (OTH)	A well drilled for water production, brine production, gas storage, water disposal, or any other purpose not covered by other Lahee classifications is classified as OTH. It may be licensed under Section 2.020 or 2.040 of the *OGCR*.


New Field Wildcat
New Pool Wildcat
Deeper Pool Test
New Pool Wildcat or Development[1]
Development (Infill)
Development (Edge)
Outpost
Status of pool when wells spudded[2, 3]
Environment unproductive when wells spudded
Environment productive when wells spudded

[1] Shallower wells may be drilled on the basis of uphole hydrocarbon evidence at adjacent wells and, therefore, the development category may be appropriate.

[2] The horizontal shaded bar represents the cross-section of a pool as previously delineated before the shown wells were spudded. (Other pools may exist on the section, but they have not yet been discovered.)

[3] The left edge of this pool is known to terminate where indicated. The exact position of the right edge has not been defined.

Figure 7.1. How to classify a well

7.10.6.1 Technical Considerations

The following describes the technical considerations for Lahee classifications:

- The Lahee classification takes into account all zones to be penetrated by the well.
- The Lahee classification takes into account any pre-existing exploited offset pools, as well as pre-existing wells with logs and/or tests that strongly suggest the presence of pools, although the pools may not have yet been exploited. In both cases, the ERCB would consider the pools as previously discovered.
- Step-out distances will vary depending upon the size and trend of pools previously encountered in the region.
- The ERCB's official designation of pool orders (formerly known as G-orders) have no bearing on the Lahee classification. This is because they may not have been issued for nearby pools and because their boundaries may not have been updated to reflect current knowledge regarding areal extent and continuity of pools.

7.10.6.2 Process and Review Information

- Lahee classifications are to be selected by the applicant in accordance with the definitions provided in Table 7.2.
- The Lahee classification is not reviewed by ERCB staff prior to the issuance of the well licence.
- It is strongly recommended that the licensee review its well licence to ensure accuracy of the Lahee classification selection. In the event that the licensee detects an incorrect

selection, a letter may be sent to the ERCB Geology and Reserves group requesting a revision. The Geology and Reserves group will issue a letter acknowledging the revision. As is the case with new licences issued, the revision request will not be reviewed for correct selection.

- As the Lahee classification is a risk assessment based upon pre-spud information, it would not be appropriate for a licensee to request a Lahee classification revision after the well has been drilled and results have been obtained.
- The ERCB may review a well's Lahee classification at any time.
- If the ERCB requires additional data in support of the licensee's Lahee classification selection, a letter will be sent to the licensee to the attention of the contact identified on Schedule 1 indicating that
  - the licensee has 30 days to file a submission package in support of its Lahee classification selection, and
  - in the absence of a submission within 30 days, the ERCB will revise the classification to the ERCB planned revision stated in the letter.
- Submission packages in support of a licensee's Lahee classification should include a covering letter stating the views of the licensee and any pre-spud technical information (maps, seismic, etc.) in support of retaining the original Lahee classification selection.
- The ERCB Geology and Reserves group will review submissions and issue a written response of its decision. In some cases, meetings to exchange information may be necessary.

The ERCB records the official Lahee classification assignment for all wells drilled in Alberta.

7.10.7 Assigning Initial Confidentiality to New Wells

The initial confidential status on new wells is based on the provisions described in the *OGCR*, Section 12.150, and the *Oil Sands Conservation Regulations*, Section 15. Table 7.3 is a guide for determining the appropriate initial confidential status of new wells. Figure 7.2 provides well scenarios to assist in assigning confidentiality to OUT, DPT, DEV, DSW, and REN wells.

7.10.7.1 Confidentiality Considerations

- A confidentiality assignment takes into account all zones to be penetrated by the well.
- The ERCB's official designation of pool orders (formerly known as G-orders) has a direct impact on confidentiality assignments. The most recent official pool order boundaries are on the ERCB Web site at www.ercb.ca.

Table 7.3. New well initial confidential status based on Lahee classification

Lahee classification	New well confidential status
NFW,NPW,TH,OV,EX	(C) – CONFIDENTIAL
OUT, DPT, DEV, DSW, REN	(C) – CONFIDENTIAL if all zones penetrated by the well are outside the limits of an ERCB-designated pool(s) (formerly known as G-orders) or inside the boundaries of an existing ERCB-designated confidential pool. Well No. 1 in Figure 7.2 demonstrates this scenario. (NC) – NONCONFIDENTIAL if the well terminates in or just below an ERCB-designated nonconfidential pool. Well No. 2 in Figure 7.2 demonstrates this scenario. If the well type and substance are production of crude bitumen in an oil sands area, the well is also nonconfidential. (CB) – CONFIDENTIAL BELOW if one or more up-hole zones penetrated by the well is inside an ERCB-designated nonconfidential pool. The confidential below formation name is the name of the deepest designated pool the well penetrates. Well No. 3 in Figure 7.2 demonstrates this scenario.
OTH	(NC) – NONCONFIDENTIAL

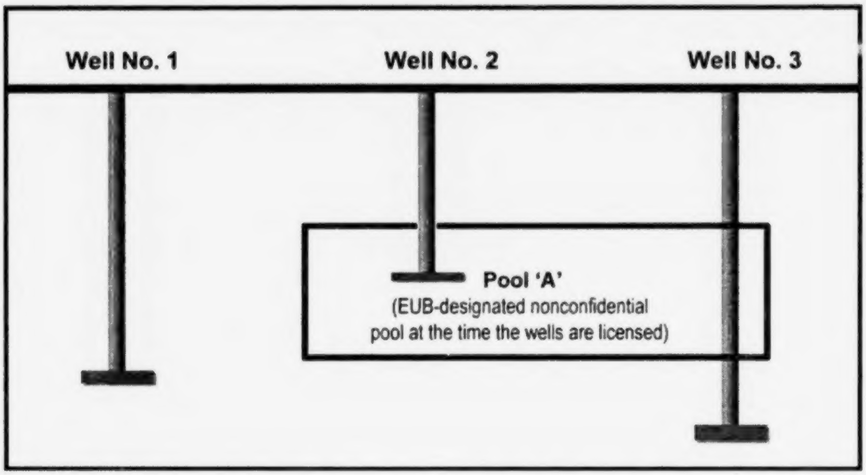

Well No. 1
Well No. 2
Well No. 3
Pool 'A'
(EUB-designated nonconfidential pool at the time the wells are licensed)

Figure 7.2. Well scenarios to assist in assigning confidentiality and drill cutting sample requirements

7.10.7.2 Process and Review Information

- Initial confidentiality statuses are to be selected by the applicant.
- Initial confidentiality selections are not reviewed by ERCB staff prior to the issuance of a well licence.
- The ERCB strongly recommends that the licensee review its well licence to ensure accuracy of the initial confidentiality status. In the event that the licensee detects an incorrect selection, it may send a letter to the ERCB Geology and Reserves group requesting a revision. As one of the ERCB's broad mandates is dissemination of information regarding the oil and gas resources of Alberta, a request to revise an initial

selection may be subject to review by ERCB staff. The Geology and Reserves group will issue a letter in response to all requests.

- Initial confidentiality reviews will be performed by ERCB staff shortly after a well licence is issued.
- In cases where the selection does not appear consistent with the regulations, the ERCB may issue a letter requesting information to support the confidentiality assignment. The letter will be sent to the contact identified on Schedule 1 and will indicate that
    - the licensee has 30 days to file a submission package in support of the licensee's initial confidentiality selection, and
    - in the absence of a submission within 30 days, the ERCB will revise the initial confidentiality to the ERCB planned revision stated in the letter.
- Submission packages should include a covering letter stating the views of the licensee and any information in support of retaining the initial confidentiality selection.
- The ERCB will review submissions and issue a written response of its decision. In some cases, meetings to exchange information may be necessary.

7.10.7.3 Ongoing Confidentiality Maintenance

Ongoing confidentiality maintenance may result in further revisions. After a well has been drilled, a licensee may request a revision to its confidentiality assignment based upon information gained as a result of drilling. If the revision meets the criteria in the regulations, the ERCB will revise the confidentiality. The ERCB will provide a written response to the request.

For each well carrying a confidential status, the ERCB will initially assign an expected confidentiality release date of one year from its finished drilling date. However, the ERCB may scrutinize a well's confidentiality at any time, and if it meets the conditions for release in accordance with Section 12.150 of the *OGCR* or Section 15 of the *Oil Sands Conservation Regulations*, its confidential status will be revised by ERCB staff. Notification will not be provided to the licensee.

7.10.8 Drill Cutting Sample Requirements

Drill cutting sample requirements are determined using Figure 7.3 and Table 7.4, which describes the appropriate drill cuttings samples required based upon a well's Lahee classification described in Table 7.2. In addition, Figure 7.2 provides well scenarios to assist in assigning drill cutting sample requirements.

33) The applicant must submit drill cuttings in 5 m intervals and in accordance with Section 11.010 of the *OGCR*..

The ERCB may periodically identify areas where geological complexities dictate that additional samples should be taken. In those cases, the ERCB will notify the licensee of the revised requirements before drilling commences.

7.10.9 Groundwater Protection

34) Applicants must ensure that usable ground water is protected during drilling operations by

a) meeting the requirements of *Directive 008*, so that usable aquifers (water containing less than 4000 milligrams per litre [mg/l] total dissolved solids) will be covered by cementing surface casing, cementing the next casing string, or appropriate placement of open-hole abandonment plugs, and

b) referring to *ST 55-2007* to determine if a reference well or depth below ground level is available to determine the base of groundwater protection. The Base of Groundwater Protection (BGP) Query Tool is also available on the ERCB DDS site. For questions relating to the BGP, contact the ERCB Environment Group by telephone at 403-297-8330 or by e-mail at enviro.services@ercb.ca.

7.10.10 Surface Casing and Exemptions

Directive 008 sets out the technical guidelines for determining surface casing in wells to be drilled and gives specific areas where surface casing is not required.

35) The applicant may obtain a waiver from *Directive 008* requirements by filing a nonroutine application and ensuring that the following conditions are met:

  a) The proposed well terminates at less than 950 m true vertical depth.

  b) The proposed well is located in or adjacent to a development-type setting.

  c) The maximum absolute open flow (AOF) rate from offset wells does not exceed 109 thousand (10^3) m^3/day.

  d) There are no problems such as overpressuring, severe lost circulation, kicks, release or blowouts, or artesian water flows within 3 km of the proposed site.

36) To obtain a waiver, the applicant must file a nonroutine application and include the following information, where applicable:

  a) Geological data

    i) Identify all zones from surface to total depth.

    ii) Identify porous or permeable zones.

    iii) Identify gas potential in the hydrocarbon-bearing zones.

      - If no gas potential exists, provide an isopach map showing how far the productive zone(s) extends.
      - If gas potential exists, state whether the maximum AOF gas rate from the offset wells exceeds 109 10^3 m^3/day.

    iv) State if there is an enhanced recovery scheme within 1 km of the proposed well.

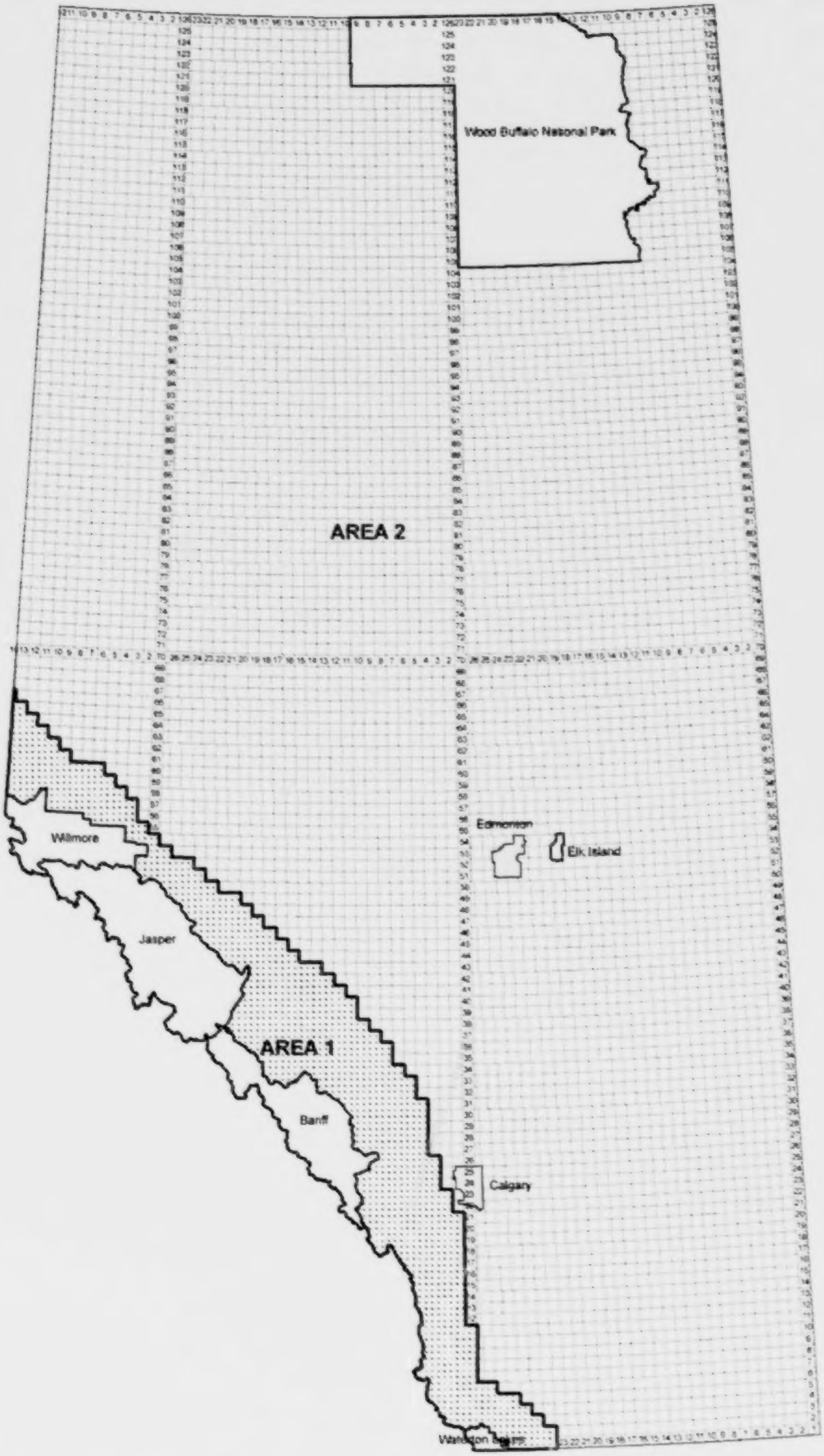

Wood Buffalo National Park
AREA 2
Edmonton
Elk Island
Willmore
Jasper
AREA 1
Banff
Calgary
Waterton Lakes

Figure 7.3. Drill cutting sample requirements by area in Alberta

Table 7.4. Drill cutting sample requirements

Area 1 (see Figure 7.3)		
Lahee classification	**Well Scenario**	**Drill cutting sample requirement**
NFW, NPW, EX		Base of surface casing–to–total depth
REN, TH, OTH		No drill cutting samples required
DPT, OUT	Well falls outside all ERCB-designated pools (formerly known as G-orders) from surface to total depth (see Well No. 1 in Figure 7.2).	Base of surface casing–to–total depth
	Well falls inside an ERCB-designated pool at total depth (see Well No. 2 in Figure 7.2). **or** Well penetrates an ERCB-designated pool and is drilling to a deeper horizon (see Well No. 3 in Figure 7.2).	30 m above shallowest potential hydrocarbon bearing horizon–to–total depth
DEV, DSW	Well meets **one** of the exceptions described below.	No drill cutting samples required
	Well does not meet one of the exceptions described below.	Sample requirements as DPT and OUT wells above
Area 2 (see Figure 7.3)		
Lahee classification	**Well Scenario**	**Drill cutting sample requirement**
NFW		Base of surface casing–to–total depth
NPW, EX		30 m above shallowest potential hydrocarbon bearing horizon–to–total depth
OV, REN, TH, OTH		No drill cutting samples required
DPT, OUT	Well falls outside all ERCB-designated pools from surface to total depth (see Well No.1 in Figure 7.2).	30 m above shallowest potential hydrocarbon bearing horizon–to–total depth
	Well falls inside an ERCB-designated pool at total depth of Well No. 2 in Figure 7.2.	No drill cutting samples required
	Well penetrates an ERCB-designated pool and is drilling to a deeper horizon (see Well No. 3 in Figure 7.2).	30 m above the first potential hydrocarbon bearing horizon to be encountered after the well drills through the deepest ERCB designated pool–to–total depth
DEV, DSW	Well meets **one** of the exceptions described below.	No drill cutting samples required
	Well does not meet one of the exceptions described below.	Same requirements as DPT and OUT wells above
Exceptions		
1) On Schedule 4, Part 5, the well "Type" is "Production" and "Well Substance" is "Crude Bitumen."		
2) On Schedule 4, Part 7, the well "Type of Drilling Operation" is "Horizontal."		
3) On Schedule 4, Part 7, the well "Projected Total Depth" is less than 600 m.		

b) Thermal schemes

- i) Describe the method of recovery.
- ii) State the frequency and duration of cyclic operations.
- iii) Give the volume of steam injected.
- iv) Give the bottomhole distance to active steaming and/or production-affected areas.

v) State temperatures and pressures at observation wells.

vi) State how much of the reservoir is affected by steaming operations.

vii) Give the time it takes for a steamed area to cool once it has been produced.

viii) Give the temperature and pressure in the production cycle at which it is safe to drill.

c) Operations

i) Review hole operations within a 3 km area down to and including the terminating formation and provide the location, zone, depths, and type of hole problems, including

- severe lost circulation,
- artesian water flows,
- hole sloughing,
- kicks,
- release and blowouts,
- abnormal pressures (greater than 10 kPa/m), and
- low cement tops.

ii) For horizontal wells, indicate if intermediate casing will be set prior to drilling the horizontal section.

iii) Provide evidence that the conductor casing will be set into a competent formation.

iv) Indicate what cementing method will be used when setting conductor casing.

37) In addition to the above, the applicant must provide a map of the area showing

a) proposed surface and bottomhole locations,

b) existing wells within 3 km that are drilled to the proposed terminating zone,

c) wells with hole problems within 3 km,

d) AOF gas rates for existing wells,

e) proximity to thermal wells, and

f) proximity to water bodies.

7.10.11 Right to Produce or Operate

38) Prior to submitting a well licence application, the applicant must

a) be a working interest participant;

b) be entitled to the right to produce the oil, gas, or crude bitumen from the well or have the right to drill or operate the well for the authorized purpose;

c) acquire the right to produce from the intended formation for the complete drilling spacing unit (DSU):

Part 4 of the *OGCR* states requirements for normal DSUs and for special DSUs. Applicants need to be aware that fractional sections require a special DSU if the size of the fractional section differs by more than 5 per cent from a normal DSU. The applicant must ensure that it acquires the rights for the entire DSU for the intended purpose of the well prior to submitting the application.

d) if applicable, obtain permission from the Alberta Department of Energy to produce minerals under water bodies on Freehold mineral lands, as the Crown holds the mineral rights beneath water bodies; and

e) because normal DSUs do not include the road allowance, contact the Alberta Department of Energy if the bottomhole location of the well is in a road allowance.

There are two types of mineral ownership in Alberta: Freehold and Alberta Crown. It is the applicant's responsibility to ensure that it has reviewed the mineral ownership for the entire DSU and acquired the necessary mineral rights prior to application. For the purpose of well licence applications, Federal Crown minerals are treated as Freehold.

Water source and injection/disposal wells do not require the acquisition of a complete DSU. A letter authorizing the activity from the mineral rights lessee or, in the case of undisposed minerals, the Alberta Department of Energy, is sufficient to demonstrate the right to produce or operate the well.

Licensees must ensure that they maintain the right to produce or operate the well for its intended purpose from application through to the commencement of drilling and ultimately throughout the life of the well. Loss of mineral rights at any point after application submission and prior to the commencement of drilling may result in licence cancellation and enforcement measures for noncompliance.

The issuance of a well licence or conducting of an ERCB audit are not to be relied upon by the licensee or third parties as a legal determination or confirmation of mineral entitlement or of the right to produce hydrocarbons or to conduct other activities on lands covered by the licence.

7.10.11.1 Mineral Lease Continuation

The Alberta Department of Energy does not consider an application for a mineral lease continuation sufficient to demonstrate that an applicant has the rights for all of the intended purposes of the well.

39) Prior to submitting a well licence application with ERCB Facilities Applications, the applicant must receive a signed approval granting a mineral lease continuation from the Alberta Department of Energy.

7.10.11.2 Wellbore Rights for Abandoned Wells

Wellbore rights are separate and distinct from mineral rights and require separate approval before a well licence application can be filed.

40) Prior to filing a well licence application with Facilities Applications, the applicant must acquire the rights to the abandoned wellbore:

a) For Freehold mineral rights, the applicant must obtain the abandoned wellbore rights from the licensee of record.

    i) The applicant must file a nonroutine application if it is unable to acquire an agreement from the licensee of record.

b) For Crown mineral rights,

    i) if the mineral rights have not expired, the applicant must obtain the abandoned wellbore rights from the licensee of record;

    ii) if the mineral rights have expired, the abandoned wellbore rights revert to the Crown. In this case, the applicant must obtain well re-entry approval from the Crown using the Request for Well Re-Entry Approval form available on the Alberta Department of Energy Web site.

7.10.12 Setback Requirements

There are specific setback distances between wells containing H_2S gas and permanent dwellings, unrestricted country developments, urban centres, or public facilities.

41) The applicant must meet the applicable setback requirements in Table 7.5 based on the calculated H_2S release rate for the proposed well.

42) The level designation must be based on the suspended/producing H_2S release rate.

Table 7.5. Setback requirements for wells containing H_2S

Level	H_2S release rate (m^3/s)	Minimum distance
1	≥ 0.01 to < 0.3	0.1 km, as stated in Section 2.110 of the *OGCR*
2	≥ 0.3 to <2.0	0.1 km to individual permanent dwellings and unrestricted country developments 0.5 km to urban centres or public facilities
3	≥ 2.0 to <6.0	0.1 km to individual permanent dwellings up to 8 dwellings per quarter section 0.5 km to unrestricted country developments 1.5 km to urban centres or public facilities
4	≥ 6.0	As specified by the ERCB but not less than Level 3

The following subsections describe ERCB setback requirements applicable to wells.

7.10.12.1 Water Bodies

A water body may be natural or manmade and contain or convey water continuously, intermittently, or seasonally.

For the purposes of *Directive 056,* a natural water body is defined as any location where water flows or is present, whether the flow or the presence of water is continuous, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, and other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills.

For the purposes of *Directive 056*, a manmade water body may include, but is not limited to, a canal, drainage ditch, reservoir, dugout, and other manmade surface feature.

43) The well centre must be sited a minimum of 100 m from a water body.

44) To submit a routine well licence application if the well centre is located on Freehold or Crown land but does not meet the 100 m setback requirement, the applicant must

  a) have a Crown disposition if the well centre is located on Crown land;

  b) maintain natural drainage if there is intermittent drainage or a spring/artesian flow across the well site or access road on Freehold and Crown land; and

  c) have acceptable measures in place to protect the water body during drilling and future production operations and mitigate the consequences of a spill on Freehold and Crown land.

    i) Acceptable measures must include one or more of the following as required:

      - site and berms constructed using impermeable materials,
      - synthetic liner,
      - vacuum truck,
      - absorption material,
      - enclosed systems with tankage, and
      - textile mat.

    ii) The ERCB expects the measures to comply with all relevant requirements of provincial and federal legislation and regulation (including the *Environmental Protection and Enhancement Act*, *Water Act*, *Public Lands Act*, *Fisheries Act*, and the *Navigable Waters Protection Act* and the regulations thereunder).

45) If the applicant cannot meet the requirements to file a routine well application or proposes alternative mitigative measures, the applicant must submit a nonroutine application.

  a) To submit a nonroutine application, the applicant must attach information outlining the measures in place to protect the water body from contamination during drilling and future production operations and to mitigate the consequences of a spill.

7.10.12.2 Surface Improvements

For the purposes of *Directive 056*, a surface improvement is defined as a

- railway, pipeline, canal, or other right-of-way,
- road allowance and surveyed roadway,
- dwelling,
- industrial plant,
- aircraft runway or taxiway,
- building used for military purposes,
- permanent farm building,
- school, or
- church.

A surveyed road/road allowance is a surface improvement; however, specific setback requirements are discussed under Section 7.10.12.3.

46) The well centre must be sited a minimum of 100 m from a surface improvement.

47) To submit a routine well licence application, the applicant must

  a) meet the 100 m setback requirement, or

  b) acquire the consent of the surface improvement owner if the well centre does not meet the 100 m setback for

    i) a railway, pipeline, gas co-op, canal, or other right-of-way, or

    ii) a private access road.

48) For all other surface improvements, if the surface improvement owner consents to relaxation of the 100 m setback requirement, the applicant must submit a nonroutine well licence application. If the ERCB determines that operations can be conducted safely, the ERCB may approve the application.

49) If consent from the surface improvement owner cannot be acquired, the applicant must file a nonroutine well licence application.

7.10.12.3 Surveyed Road/Road Allowance

A surveyed road/road allowance, whether developed or undeveloped, including a lease/access road located on Crown or Freehold land, is considered a surface improvement but is subject to a 40 m setback.

The ERCB will consider a lesser distance if the applicant demonstrates that special circumstances exist and that the owner or administrator of the surface lands does not object.

50) To apply for a relaxation from the 40 m setback requirement, the applicant must

  a) file a nonroutine application;

  b) attach supporting documentation, including proof of owner/administrator consent; and

  c) upon ERCB request, submit geographical/topographical information and any proposed mitigative measures.

51) The applicant is expected to consider other setback restrictions set out by Alberta Transportation and local authorities.

7.10.12.4 Airports

52) If the applicant proposes to drill a well within

  a) 5 km of a lighted (registered or unregistered) airstrip/aerodrome or

  b) 1.6 km of an unlighted (registered) airstrip/aerodrome prior to filing the well licence application, the applicant must advise the Regional Manager, Air Navigation Requirements, Transport Canada, using the Transport Canada Drilling Rig Clearance Form (Appendix 6).

53) If the applicant proposes to drill a well within a 1.6 km radius of a private, unregistered, and unlighted airstrip/aerodrome, the applicant must notify the owner/operator prior to submitting the well licence application to ERCB Facilities Applications.

  a) If notification is required, the applicant must provide

    i) the applicant's project-specific information package, including the height of the derrick and the anticipated drilling dates,

    ii) the letter from the Chairman of the ERCB, and

  b) offer copies of

    i) the ERCB brochure *Understanding Oil and Gas Development in Alberta*,

    ii) the ERCB publication *EnerFAQs No. 7: Proposed Oil and Gas Development: A Landowner's Guide*, and

    iii) the EnerFAQs listed in Appendix 11.

7.10.12.5 Coal Mines

Sections 6.140 to 6.190 of the *OGCR* detail the requirements if a well is proposed within 3 km of subsurface mine workings, either working or abandoned.

54) The applicant must

  a) provide a review of the details of the mine plans to ensure that no drilling takes place within 15 m of a mineshaft, or

  b) obtain prior written approval and direction of the ERCB granting relief from this requirement.

55) If the applicant intends to drill through a bed or seam of coal, the applicant must notify in writing all Freehold coal rights owners and the lessees of Freehold or Crown coal rights (unless the applicant is also the holder of the coal rights). This notification must precede the filing of a well application with ERCB Facilities Applications.

The applicant is not required to notify the Crown regarding coal rights, whether or not the coal rights have been leased.

7.10.13 ERCB Environmental Requirements

56) The applicant is expected to assess each well site and access road and to develop plans to conserve, reclaim, and mitigate the effects of its activities. These plans should include measures to contain any spills and prevent and control the following: soil and water contamination, soil erosion, siltation of any drainage courses or water bodies, and slope instability.

57) To submit a routine well licence application, the applicant must meet the following requirements:

a) For CBM wells completed above the base of ground water protection, the applicant must meet the environment requirements listed in Appendix 13.

b) The applicant must have acceptable measures in place to protect the environment during drilling and future production operations and to mitigate the consequences of a spill.

i) Acceptable measures for on-site containment must include one or more of the following as required:

- site and berms constructed using impermeable materials,
- synthetic liner,
- vacuum truck,
- absorption material,
- enclosed systems with tankage, and
- textile mat.

ii) The ERCB expects the measures to comply with all relevant requirements of provincial and federal legislation and regulation (including the *Environmental Protection and Enhancement Act*, *Water Act*, *Public Lands Act*, *Fisheries Act*, and the *Navigable Waters Protection Act* and the regulations thereunder).

iii) Prior to construction or preparation of a well lease site or a well site access road, the licensee is expected to meet the requirements and guidelines in all current and applicable Alberta Environment informational letters. These currently include

- *R&R/03-2: Siting an Upstream Oil and Gas Site in an Environmentally Sensitive Area on Private Land—Guidance for Private Land*
- *R&R/03-3: Revegetation Using Native Plant Materials—Guidelines for Industrial Development Sites*
- *R&R/03-4: Weeds on Industrial Development Sites—Regulations and Guidelines*
- *R&R/03-5: Problem Introduced Forages on Prairie and Parkland Reclamation Sites—Guidance for Non-cultivated Land*
- *R&R/03-6: Sites Reclaimed Using Natural Recovery Methods—Guidance on Site Assessment*
- *R&R/03-7: Wellsite Construction—Guidelines for No-Strip and Reduced Disturbance*

c) If native prairie is present, the applicant is expected to follow the principles detailed in ERCB *IL 2002-01: Principles for Minimizing Surface Disturbance in Native Prairie and Parkland Areas*.

d) If there is intermittent drainage or a spring/artesian flow across the well site or access road, the applicant must maintain natural drainage.

    e) If the proposed well site is within a caribou range, the applicant must follow the requirements and consult the guidelines in ERCB *IL 94-22: Operating Guidelines for Industrial Activity in Caribou Range—North-West Alberta.*

In 1993, the ERCB issued *IL 93-09: Oil and Gas Developments Eastern Slopes (Southern Portion)*, setting guidelines and expectations for oil and gas development in this region. These expectations were further clarified by the ERCB in *Bulletin 2007-35: Clarification of Informational Letter (IL) 93-09: Oil and Gas Development Eastern Slopes (Southern Portion).*

58) If the proposed well site is located within the Eastern Slopes (Southern Portion), the applicant must meet the general expectations described in *IL 93-09 by:*

    a) preparing development plans beyond the initial exploration stage, taking into consideration current stages such as

        i) pool delineation (initial),

        ii) pool delineation (subsequent),

        iii) pool development, and

    b) developing environmental assessments, as detailed in *IL 93-09*.

59) The applicant must submit a nonroutine application if it cannot meet the requirements to file a routine well licence application or if it proposes alternative mitigative measures.

    a) To submit a nonroutine application, the applicant must attach information outlining why the application is nonroutine and the alternative mitigative measures the applicant proposes to have in place to protect the environment.

An ERCB well licence does not relieve the applicant/licensee from meeting the legislative or regulatory requirements of the following:

- *Environmental Protection and Enhancement Act* and *Regulations*
- Other relevant acts, including provincial and federal legislation and regulation (including the *Water Act*, *Public Lands Act*, *Fisheries Act*, and the *Navigable Waters Protection Act* and the regulations there under).

The ERCB will review all applications and the supporting information submitted as part of a nonroutine application prior to issuing a licence.

7.10.14 Alberta Community Development

60) For proposed projects on Freehold lands, the applicant must consult Alberta Community Development's *Listing of Significant Historical Sites and Areas* to determine whether a proposed well site will require Alberta *Historical Resources Act* clearance prior to filing a well licence application. This list explains when a *Historical Resources Act* clearance is required and how to obtain a clearance. See also ERCB *IL 82-11: Preservation of Archaeological, Palaeontological, and Historical Resources.*

a) If the proposed well site is to be located on land identified in the list, the applicant must

   i) obtain *Historical Resources Act* clearance prior to submitting a well licence application, or

   ii) submit a well licence application as nonroutine if Alberta Community Development has not granted clearance, and include a detailed explanation.

7.10.15 H_2S Release Rate Assessments

The ERCB requires the applicant to conduct an H_2S release rate assessment for each Category C, D, or E well to ensure public safety when developing projects containing H_2S gas. The H_2S release rate assessment determines the minimum EPZ for the proposed project and dictates the minimum radius for the applicant's personal consultation and notification program.

61) If the producing or completion H_2S release rate is greater than the drilling release rate, the applicant must fulfill the personal consultation and notification requirements applicable to the higher rate.

Pursuant to Section 12.150(8.1) of the *OGCR*, the ERCB will normally consider interpretative data submitted in support of release rate assessments as confidential, provided that the data are indicated as confidential at the time of filing.

Test data used for H_2S release rate assessments are available in area summary format or individual well format from ERCB Information Services.

An applicant may file an H_2S release rate assessment with the ERCB Geology and Reserves group prior to submitting a well licence application. The ERCB strongly encourages companies to file "presubmission" H_2S release rate assessment packages. This presubmission allows the applicant to

- obtain feedback on methodology and H_2S release rate assessments,
- verify personal consultation and notification radiuses applicable to the well project, and
- minimize the well licence application processing time.

After reviewing an applicant's presubmission, the ERCB Geology and Reserves group will identify any deficiencies and advise the applicant. The Geology and Reserves group may close and return the presubmission if the H_2S release rate assessment does not conform to the requirements in *Directive 056*.

62) Prior to filing a well licence application, the applicant must also do the following:

   a) The applicant must prepare an adequate H_2S release rate assessment that meets the outlined requirements.

   b) The applicant must evaluate the 15 m overhole zone for potential H_2S gas and, if necessary, incorporate this information into the H_2S release rate assessment.

c) Upon ERCB request, the applicant must provide documentation to demonstrate that the H_2S release rate assessment was conducted prior to filing the well licence application.

d) The applicant must include related H_2S details for a well that may encounter H_2S gas by using Schedule 4.3. The information given in Schedule 4.3 forms the basis for the applicant's participant involvement program for the proposed well project.

63) Each H_2S release rate assessment must consist of the following four components, but may include additional components as circumstances warrant. These four components constitute the H_2S release rate documentation package:

a) geological well prognosis, with a comprehensive geological discussion (Section 7.10.15.1),

b) geological mapping (Section 7.10.15.2),

c) engineering discussion (Section 7.10.15.3), and

d) tabulated data (Section 7.10.15.4).

A case study is provided in Appendix 8.

64) The applicant must support the H_2S release rate assessment with the proper documentation, as detailed in this section.

a) This information must be available prior to filing a presubmission or well licence application and upon ERCB request. Its immediate availability is crucial in an emergency situation.

65) The ERCB expects that the documentation package will be prepared under the supervision of a member of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA), or other technical designation, or by an individual with demonstrated capability in H_2S release rate assessments.

7.10.15.1 Geological Discussion

66) The applicant must provide a geological well prognosis, including a comprehensive geological discussion, to address the H_2S potential of all prospective formations encountered by the well.

There are two basic cases for reviewing H_2S potential:

a) shallow wells: wells planned to reach total depth prior to the top of the Mannville Group (or equivalent zone), and

b) deep wells—wells planned to be drilled deeper than the top of the Mannville Group.

Shallow Wells

Reservoirs in shallow horizons may develop very low concentrations of H_2S gas during their operational life. In these cases, the calculated H_2S release rate may result in an emergency planning radius that is less than the total radius of the well site lease; however, this needs to be considered with respect to safety of personnel and the public.

67) The applicant must plan for the potential to encounter H_2S gas if gas analysis data in the public domain demonstrate that a reservoir originally not containing H_2S gas has evolved to gas containing H_2S.

Deep Wells

These wells have the potential to encounter H_2S gas horizons throughout the Mannville Group and deeper. However, H_2S gas zones may be encountered at shallower depths. Reservoirs in shallow zones may develop very low concentrations of H_2S gas during their operational life; one example is the Cardium Formation.

If a well encounters H_2S gas in the Mannville Group or deeper, the estimated H_2S release rate derived from the deeper zones usually overwhelms the small contribution from shallower zone(s). In this case, the contribution from shallower zones need not be considered in the cumulative H_2S assessment for the proposed well.

68) Should the assessment reveal that gas containing H_2S will not be encountered in formations and/or depths greater than the top of the Mannville Group, the applicant must revisit the well prognosis and provide an H_2S release rate assessment for any shallow zones that have any concentrations of H_2S gas.

69) Should either proprietary data or data in the public domain on H_2S gas concentrations indicate that the H_2S release rate for shallow zones significantly impacts the cumulative H_2S release rate for the proposed well, the applicant must include this information in the review.

Geological Considerations

70) The geological discussion must indicate the basis for the interpretation of the potential to encounter gas containing H_2S for each horizon (e.g., open-hole log interpretation, cross-sections, or pool isopachs derived from open-hole logs or seismic information, drillstem test (DST) recoveries, production, or any other appropriate information).

    a) The geological review must support the applicant's choice of data used in the H_2S release rate calculation. The Canadian Association of Petroleum Producers (CAPP) document *H_2S Release Rate Assessment Guidelines and Audit Forms* is one possible reference for the types of calculation adjustments or corrections that may be required.

71) The applicant is expected to consider the following examples (or other situations where they apply) of geological interpretations that may affect the H_2S release rate calculation for the proposed well:

    a) Wells near potentially productive reservoirs containing H_2S gas that are located along erosional edges (e.g., the Elkton member) should be evaluated for the potential for a reduced reservoir thickness beyond the limits of seismic resolution and for the potential to encounter productive outliers.

    b) Different geological environments may lead to different potential reservoir trends. These trends sometimes exhibit a bias in H_2S concentration and/or AOF rates for wells completed in the different geological environments. This bias should be considered when reviewing data for geological analogs.

   i) Because of the potential differences in AOF rates and H_2S concentrations, the applicant should identify and discard data obtained from a Nisku pinnacle reef reservoir in the West Pembina Basin if the target is the Nisku bank facies.

   ii) H_2S concentration and AOF rate data for wells in the Foothills area must be segregated by structural trend for evaluation, since the geological analog may be a pool on the same structural trend as the proposed well.

   iii) If multiple sands within a formation are potentially productive (e.g., Ellerslie #1 and #2 sandstone), the H_2S release rate must be adjusted to reflect this scenario.

c) If analog well data or seismic interpretation indicates that a substantially thickened reservoir is potentially present, this information must be used to determine the H_2S release rate.

7.10.15.2 Geological Mapping

The ERCB recommends that the applicant begin its geological assessment using a three-township by three-range map plot to examine the well penetration data appropriate for each zone that it has identified or will identify on Schedule 4: Well Purpose as its primary and secondary zones that may contain H_2S gas. The mapped data may assist in the determination of geological trends, the identification of applicable geological analog pools, and the estimation of the potential availability of H_2S concentration and AOF rate data for the geologically analogous area.

The results of this initial review may indicate that the map area should be expanded to identify the geological trend (e.g., reef platform or thrust sheet) or needs to be reduced due to a high well data density capable of providing sufficient data for review (e.g., oil pools with reduced spacing).

72) The applicant must submit geological maps for all prospective formations that it has or will identify on Schedule 4: Well Purpose as its primary and secondary zones that may contain H_2S gas.

   a) For other potential H_2S zones that are not noted on Schedule 4, the ERCB expects the applicant to implement the process outlined in Section 7.10.15.4. Mapping of these zones is not required.

73) The applicant must submit schematic dip-oriented cross-sections for all proposed wells located in the Foothills geological area based on existing well control or seismic information. The schematic cross-section must illustrate the relationship and the structural style of the prospective zones that may contain H_2S gas.

74) For map presentations relying on net pay or porosity interpretations, the applicant must provide the basis for the interpretation (e.g., gross pay, shale cutoffs, log porosity cutoffs, water saturation cutoffs) where applicable.

75) All map and schematic cross-section presentations must be completed prior to the date of filing a well licence application.

The applicant may choose the map type that best illustrates its geological interpretation. Some examples of appropriate maps types are

- net pay isopach,
- gross pay isopach,
- structure contour,
- show or bubble maps denoting test or production information,
- porous thickness isopach, and
- isochron maps.

76) Maps must show

  a) township, range, meridian (sections where appropriate),
  b) map scale,
  c) geological analogous area or pool,
  d) date prepared and company name, and
  e) existing well control and proposed well location.

The applicant may choose the map annotations that best illustrate its geological interpretation. Map annotations should be applicable to the map type submitted.

Some examples of annotations on a net pay isopach map are

- presence or absence of porosity (e.g., tight, shale),
- fluid content (e.g., water, gas, and/or oil) of the zone,
- absence of the zone otherwise anticipated (e.g., eroded), and
- estimate of net pay/pay:
    - where the zone is productive,
    - at the proposed well location, and
    - by using contouring at the proposed location.

Some examples of annotations on a structure contour map are

- presence or absence of porosity (e.g., tight, shale),
- fluid content (e.g., water, gas, and/or oil) of the zone,
- absence of the zone otherwise anticipated (e.g., eroded),
- structural elevations and source (e.g., zone top or porosity top), and
- structural contouring.

7.10.15.3 Engineering Discussion

77) The applicant must provide an engineering assessment for each potentially productive zone that may contain H_2S gas that includes

  a) constraints that geological interpretation places on data gathering and review,

b) corrections to H_2S concentration data, and

c) corrections to AOF rate data.

78) Data must be from an analogous geological area or pool. Use of data from an arbitrary search area without consideration of the geological similarity of the pools is not appropriate.

Use of an arbitrary search area is appropriate only when

a) a review of the geological interpretation reveals that analogous geological pools exist within the search area, or

b) no demonstrated pattern or trend can be established and therefore the maximum H_2S concentration data and AOF rate data should be used.

79) The applicant must include a summary of the logic used to determine the release rate for each formation. The summary could be as simple as a statement indicating that the pay, pressure, and deviation for the proposed well and analog well are comparable and, therefore, the highest values have been used; or it could be an in-depth account of the logic used for any data discounting and/or adjustments made.

Engineering Considerations

The CAPP document *H_2S Release Rate Assessment Guidelines* is one reference for many of the engineering formulas required to adjust the H_2S release rate. This document may also be used as a reference for the types of calculation adjustments or corrections that may be required as a result of the geological interpretation of the potential zones that may contain H_2S gas encountered by the proposed well (see Section 7.10.15.1).

Determining Release Rates

80) The applicant must determine three H_2S release rates:

a) drilling release rate,

b) completion/servicing release rate, and

c) suspended/producing release rate.

81) To determine the cumulative H_2S release rate for the proposed well, the applicant must consider the development or exploratory nature of each zone that may contain H_2S gas.

The maximum H_2S content and the maximum AOF rate are based on the information from the surrounding geological analog pool(s) or area completed in the same or similar zones.

The H_2S release rate for each potential zone that may contain H_2S gas is determined by multiplying the maximum H_2S content and AOF rate as determined by the geological and engineering review of the available data. The paired data points need not be from the same well. The sum of the release rates from each zone becomes the cumulative release rate for the drilling, completion/servicing, and suspended/producing release rate, as applicable to the project.

If the depth(s) of casing in the wellbore affects this value, choose whichever is greater:

- the cumulative release rate for the intermediate hole section, or
- the cumulative release rate for the main hole section.

To arrive at these different release rates, AOF rate data are sorted to reflect the different flow scenarios appropriate for each horizon that may be encountered and are combined with the maximum H_2S concentration as determined by the geological assessment. If preferred, post-stimulation data, without adjustment for tubing or casing friction loss, may be used for all scenarios.

The applicant may calculate the maximum drilling release rate by totalling the unstimulated release rate for each formation.

The completion release rate for the targeted formation relies on post-stimulation AOF data. The suspended/producing release rate relies on a calculation correction for flow to surface up tubing. The suspended/producing release rate is also calculated to determine the level classification and the minimum distance or setback requirement for the proposed well (see Table 7.5. and *ID 97-06*). Communication of this minimum setback distance is a key component of the applicant's participant involvement plan for the proposed well (see Section 2).

82) A summary of the engineering review, identifying corrections or discounted data as appropriate, must be included with presubmission materials filed with the ERCB Geology and Reserves group or in the H_2S release rate assessment package submitted for application or audit purposes to ERCB Facilities Applications or upon ERCB request.

Release Rate Scenarios

83) Each proposed well must be evaluated with its unique circumstances in mind. These calculations must be documented and included with an H_2S release rate presubmission request or upon ERCB request (Section 7.10.15).

The following items reflect common release rate calculation corrections and comments on appropriate methodology. This is not intended to be exhaustive.

a) Drilling release rates—The discounting of flow data due to stimulation is not appropriate. Post-stimulation data may be adjusted to reflect a zero skin. Completion/servicing calculations may be adjusted for the effects of friction loss using the configuration of the pipe cemented in the hole, regardless of the type of completion (e.g., wellhead on).

b) H_2S samples—H_2S samples must not be discounted simply because the sample point source is listed as "other." A review of the hard copy of the gas analysis is required to determine if the sample point is reasonable for use. If the review indicates that the sample point is not representative (e.g., it is a second-stage separator sample source for a gas well release rate), it may be discounted and an annotated hard copy of the analysis describing the reason for discounting must be included.

c) Potential for both gas and oil production—If a formation has potential for both gas and oil production, the applicant must calculate both release rates and use the higher value.

    i) An H_2S release rate based on oil must be undertaken if the data indicate that

        - all of the gas samples are from gas cap or nonassociated gas reservoirs and have zero per cent H_2S concentration, and
        - all H_2S concentrations reported are for solution gas samples.

d) Extended AOF data—When both extended and stabilized AOF rates are reported, the extended AOF must be used for release rate purposes. A production rate for a well that is higher than the AOF for the same well is often an indication that the reported AOF might be the stabilized value. In this case, a review of the AOF test is required.

e) Single-point AOF—If the "n" value used for a single-point AOF test is not 1.0, a calculated AOF assuming an "n" of 1.0 must be used, unless a review is undertaken to determine a more appropriate value. A summary of this review must be included with a presubmission or upon ERCB request.

f) Potential producing zones—If the estimated potential pay for the primary and secondary zones that the applicant has identified or will identify on Schedule 4: Well Purpose are estimated to be higher than the pay for the analog well(s) used for each zone, the AOF rates must be adjusted for each zone affected.

g) Multiple sands—If multiple sands within a formation are potentially productive (e.g., Ellerslie #1 and #2 sandstone), the release rate must be adjusted to reflect this scenario. This can be done by multiplying the maximum release rate calculated for a single sand by the number of potential sands or by totalling the pay estimated for each of the sands and adjusting for the pay of the analog well. If significant differences in performances can be documented between sands, a release rate based on individual sands is acceptable.

h) AOF pressure—If the pressure reported for the AOF from an analog well is lower than the pressure expected at the proposed location, an adjustment of the AOF to the expected pressure is required. Due to the potential impact an adjustment can have on the revised AOF, the viscosity of the gas at each pressure is required to be used in the formula. If a well has multiple AOF tests performed at declining reservoir pressure, only those performed at close to the initial pressure should be used unless some type of stimulation has been performed since the first test(s).

i) Pool development—In a pool development scenario, it is reasonable to use the existing wells in the pool as analogs. If the proposed well is the second well in the pool, the H_2S concentration from the first well in the pool may be used; however, because of the variance of AOFs within pools, the flow potential should be estimated from all analogous pools in the area. If the pool is under any type of scheme (e.g., acid gas disposal/injection), the release rate must address the current pool characteristics as required by Schedule 4.3.

j) Commingled pools—Commingled pools present additional complexity when reviewing the release rate. Analog wells must not be discounted because the pool name indicates it is commingled. In many instances, test data are obtained prior to commingling. Although the pools may have approval for commingling, only a few wells in the pools may actually be commingled. A review of the test data and/or completion data is necessary to determine the actual formation tested and the appropriate data for the formations in question.

7.10.15.4 Tabulated Data

84) The applicant must provide the results of H_2S concentration and AOF rate reviews in a tabular format.

    a) The CAPP document *H_2S Release Rate Assessment Guidelines* provides data table examples. Regardless of the table format used, the basic data elements as described in the CAPP tables must be provided, along with an indication as to whether the AOF rate data are from a single or multipoint test.

85) The applicant must select a minimum of five H_2S gas analyses and AOF data points that are representative of each potential zone that may contain H_2S gas. Data points are representative if they are not discounted for technical reasons. In situations where multiple data points exist for the same well, only one value is considered representative. If any of the five data points encounter an ERCB-defined pool, the applicant must assess all of the wells within the pool boundary.

    If higher values are discounted, the applicant must support the decision in the geological or engineering discussion.

7.10.16 Working Interest Participants

86) The applicant must be a working interest participant to apply for or hold a well licence.

7.10.17 Additional Application Requirements

87) Applicants must review Section 8: Additional Application Requirements and meet all requirements applicable to the proposed location.

7.11 Audit Documentation Requirements—Schedule 4

Table 7.6 provides a summary of documents required for submission. Please refer to the referenced sections for full details. The ERCB may request the submission of additional information not listed in the table that may assist in completing the review of an application.

88) When selected for audit review, the licensee must submit the required documents within 14 calendar days of notice of audit or within the time frame as directed by the ERCB.

89) From the audit documents, the ERCB must be able to determine that the licensee fulfilled all requirements to ensure regulatory compliance prior to filing the application.

The detailed list of audit documents below corresponds to the steps found in Schedule 4.

7.11.1 Step 1: Identification

No documentation required.

7.11.2 Step 2: Participant Involvement Requirements

7.11.2.1 Mapping Requirements

90) The licensee must submit map(s) that illustrate

   a) the location of the well,

   b) the location of all parties included in the participant involvement process (e.g., residents, hamlets, subdivision, public facilities),

   c) the area of investigation used in the personal consultation and notification program, and

   d) the emergency planning zone (EPZ) (if applicable).

7.11.2.2 Personal Consultation and Notification Requirements

91) The licensee must submit a record of the personal consultation and notification program that was conducted, using a tabular format similar to the Sample Participant Involvement Summary Form (Appendix 4).

92) The summary must include

   a) name of each party (e.g., landowner, occupant, resident) included in the personal consultation and notification program,

   b) legal land description for each party,

   c) a description of each party's interest in the land (e.g., Crown disposition holder, landowner, resident, facility operator),

   d) date and type of contact conducted with each party (e.g., telephone conversation, registered mail, personal meeting),

   e) date the ERCB brochure and *EnerFAQs No. 7* were distributed if required,

   f) date the project-specific information package was distributed,

   g) date the required EnerFAQs package was provided, and

   h) date confirmation of nonobjection was obtained if required.

7.11.2.3 Confirmation of Nonobjection

93) The ERCB does not require that confirmation of nonobjection be in the form of a signature; however, documentation must be submitted when available.

   Confirmation of nonobjection may consist of one of the following documents, depending on the nature of the proposed development:

a) Freehold lease agreement (Freehold also includes Federal Lands and Provincial Special Area Board(s) Land)

   i) The licensee must submit a copy of the agreement, which confirms the parties involved, the date of agreement, and the location of land involved.

b) Crown disposition (i.e., signed Mineral Surface Lease or Miscellaneous Lease; executed Area Operating Agreement (AOA) or Temporary Field Authorization)

   i) In the case of an AOA, the licensee must submit copies of the following AOA documents:

      - the title page (including the details of the expiry date, company name and area of operation),
      - the signoff page (including when the agreement was executed), and
      - geographical map and locations list.

   ii) For all other Crown dispositions, the licensee must submit a copy of the agreement, which confirms the parties involved, the execution of the agreement (signature), the date of the agreement, and the location of the land involved.

c) Signed document that identifies the details of the proposal (e.g., signatory page from the applicant's information package)

94) If confirmation of nonobjection is verbal, the licensee must document (log) the name of the party providing verbal nonobjection and the date on which verbal nonobjection was obtained.

7.11.2.4 Information Packages

95) The licensee must submit a copy of the project-specific information package that was distributed to the parties included in the participant involvement program.

It is not necessary to include a copy of the ERCB's documents in the audit submission; however, details of its distribution must be included.

7.11.2.5 Resolved Concerns and Objections

96) If concerns/objections were received and resolved during the course of the participant involvement program, the licensee must submit

a) a record and explanation of any concerns/objections received, and

b) documentation confirming the resolution of any concerns/objections.

7.11.2.6 Sour Gas Planning and Proliferation

97) If there are residents located within the EPZ of the well, the applicant must submit

a) the assessment of existing infrastructure required by Section 8.3.2, and

b) the updated expanded project-specific information package, as described in Section 8.3.2.

7.11.3 Step 3: Emergency Response Planning

98) The licensee must keep a copy of the corporate level ERP or, where required, the specific ERP on file. It is not required for inclusion in the audit submission.

    a) The licensee must include in the audit submission a statement confirming that the applicant has an approved corporate plan and/or that a site-specific plan will be approved prior to commencing operations.

7.11.4 Step 4: Licence Amendment Only

No documentation required.

7.11.5 Step 5: Well Purpose

99) For Category B wells, the licensee must submit a representative gas analysis for each prospective horizon in the proposed well.

7.11.6 Step 6: Re-entry/Resumption/Deepening of a Well

7.11.6.1 You are the licensee of the well

No documentation required.

7.11.6.2 The well is currently abandoned

No documentation required.

7.11.6.3 You have the rights to the existing wellbore

100) The licensee must provide

    a) documentation that it has obtained the rights to the existing abandoned wellbore from the previous licensee prior to submitting the well licence application, or

    b) if the minerals have expired and the abandoned wellbore has reverted to the Crown, documentation that it has obtained the rights from the Crown prior to the submitting the well licence application.

7.11.6.4 The casing will meet the minimum casing testing requirements

101) The licensee must provide

    a) confirmation that sufficient casing was set and cemented in the well for control purposes, and

    b) confirmation that the casing has been pressure tested in accordance with the appropriate section of the minimum casing testing requirements (see Section 7.10.4), and

    c) confirmation and/or documentation that all applicable requirements in Section 7.10.4 have been met for the specific type of well and drilling operation, or

d) documentation that the well licence application was submitted nonroutinely and a waiver was granted for the required inspection log.

7.11.7 Step 7: Well Detail

7.11.7.1 Table Information

The licensee must submit a survey plan. For CBM wells completed above the base of groundwater protection, the survey plan or an additional map must meet the requirements of Appendix 13.

7.11.7.2 Surface Casing Requirements

102) The licensee must submit

a) a *Directive 008* surface casing check sheet, pressure survey, and pressure gradient documentation, including supporting information for the reduction type selected, and

b) documentation showing the base of groundwater and a description of the method proposed to protect the groundwater.

103) If a surface casing waiver has been granted, the licensee must submit a copy of the approval issued by ERCB Operations that shows the presubmission application was reviewed and found to be acceptable.

7.11.7.3 Directional Survey Requirements

No documentation required.

7.11.8 Step 8: Well Classification

104) If a drill cuttings waiver has been granted, the licensee must submit a copy of the approval issued by ERCB Geology and Reserves that shows the presubmission application was reviewed and found to be acceptable.

7.11.9 Step 9: Minerals

7.11.9.1 Rights for All Intended Purposes

105) The licensee must submit

a) the mineral rights lease number for Crown minerals,

b) documentation that authorization has been obtained from the mineral rights lessee or owner for water injection or water source wells,

c) documentation that authorization has been obtained for leased Crown minerals, and

d) documentation that authorization has been obtained for Freehold minerals.

7.11.9.2 Rights for the Complete Drill Spacing Unit

106) The licensee must submit

a) the mineral rights lease number for Crown minerals, and

b) documentation evidencing the rights for Freehold minerals.

7.11.10 Step 10: Surface Rights

Documentation captured in 7.11.2.2 and 7.11.2.3.

7.11.11 Step 11: Surface Impact

7.11.11.1 Water Body Setback Requirements

107) If the well centre is within 100 m of a water body, the licensee must submit documentation explaining the steps that were or will be taken to ensure that the water body is protected and that all ERCB requirements are met.

7.11.11.2 Other Setback Requirements

108) If the proposed well is located within 100 m from a surface improvement, the licensee must submit documentation confirming that consent from the surface improvement owner was received prior to the submission of the well licence application.

7.11.11.3 Environmental Requirements

109) The licensee must submit documentation outlining the steps that will be taken to ensure the protection of the environment and that all ERCB requirements are met. For CBM wells completed above the base of groundwater protection, additional environment audit requirements are listed in Appendix 13.

7.11.11.4 *Historical Resources Act*

110) If applicable, the licensee must submit documentation showing that it received a clearance from Alberta Community Development prior to submitting a well licence application.

7.11.12 Step 12: Working Interest Participants

No documentation required.

7.11.13 Step 13: Operational Disclosure

No documentation required.

7.12 Audit Documentation Requirements—Schedule 4.3

111) When selected for audit review, the licensee must submit the following documents within 14 calendar days of notice of audit or within the time frame as directed by Facilities Applications.

112) From the audit documentation, Facilities Applications must be able to determine that the applicant has fulfilled application requirements to ensure regulatory compliance prior to filing the application.

The detailed list of audit documents below corresponds to the steps found in Schedule 4.3.

7.12.1 Step 1: H_2S Release Rate and Step 2: Cumulative H_2S Release Rate

113) The licensee must submit a map showing the size and location of the search area used to obtain a minimum of 5 valid (not discounted) maximum H_2S concentrations and maximum AOF gas rates.

114) The licensee must submit an H_2S release rate documentation package (see Section 7.10.15) that includes

   a) a geological well prognosis, with a comprehensive geological discussion for all prospective formations/zones,

   b) geological mapping for all prospective formations that it has identified or will identify on Schedule 4: Well Purpose as its primary and secondary zones that may contain H_2S gas,

   c) an engineering discussion for each potentially productive zone that may contain H_2S gas, and

   d) tabulated data that provide the results of H_2S concentration and AOF rate reviews.

115) If a presubmission H_2S release rate assessment was submitted, the licensee must submit a copy of the letter issued by ERCB Geology and Reserves that shows the presubmission application was reviewed and found to be acceptable.

7.12.2 Step 2: Cumulative H_2S Release Rate

7.12.2.1 Intermediate Casing

116) The licensee must submit the depth to which the intermediate casing will be set.

117) If an intermediate casing waiver has been granted, the licensee must submit a copy of the approval issued by ERCB Operations that shows that the prelicensing application was reviewed and found to be acceptable.

7.12.2.2 Maximum H_2S Concentration in Well

No documentation required (covered in Section 7.12.1).

7.12.2.3 Anticipated Suspended/Producing Level as per *ID 97-06*

No documentation required (covered in Section 7.12.1).

7.12.3 Step 3: Emergency Planning Zone

No documentation required.

7.12.4 Step 4: Critical Well Only

7.12.4.1 Drilling Critical Wells

118) The applicant must submit a complete and detailed drilling plan based on the requirements in *ID 97-06, Directive 036*, and IRP Volume 1. The drilling plan must include a detailed table of contents.

119) The applicant must submit a copy of any applicable waiver approvals obtained from ERCB Operations prior to filing an application, if applicable.

Table 7.6. Well application audit checklist

Section No.	Y	N	N/A	Audit documents
7.11.2	**Step 2: Participant Involvement Requirements**			
7.11.2.1	**Participant Involvement Map Requirements**			
				Map
7.11.2.2	**Personal Consultation and Notification Requirements**			
				Participant Involvement Summary
7.11.2.3	**Confirmation of Nonobjection**			
				Freehold lease agreement
				Crown disposition
				Signed information document
				Documented verbal consent
				Written agreement to proceed to Surface Rights Board
7.11.2.4	**Information Packages**			
				Applicant's project-specific information package
				List of all documents provided to participants
				Documented refusal of information packages
7.11.2.5	**Resolved Concerns and Objections**			
				A record and explanation of any concerns/objections received that were resolved
				Documentation demonstrating resolution of the concerns/objections received
7.11.2.6	**Sour Gas Planning and Proliferation**			
				For cases where there are residents located within the EPZ of the facility, the applicant must submit the assessment of existing infrastructure required by Section 8.3.2
				The additional project-specific information package details identified in Section 8.3.2
7.11.3	**Step 3: Emergency Response Planning**			
				Statement confirming that a corporate plan exists or a site-specific plan will be approved prior to operation (continued)

Table 7.6. Well application audit checklist (continued)

Section No.	Y	N	N/A	Audit documents
7.11.5	**Step 5: Well Purpose**			
				For Category B wells, a representative gas analysis for each prospective horizon
7.11.6	**Step 6: Re-entry/Resumption/Deepening of a Well**			
7.11.6.3	**Question 3: You have the rights to the existing wellbore**			
				Documentation to confirm that the rights to the existing wellbore have been acquired
7.11.6.4	**Question 4: The casing will meet the minimum casing testing requirements**			
				Confirmation and/or documentation that all applicable minimum requirements in Section 7.10.4 have been met
				A copy of the inspection log waiver if one has been granted
7.11.7	**Step 7: Well Detail**			
7.11.7.1	**Table Information**			
				Survey plan
				For CBM wells completed above the base of groundwater protection, survey plan or map that meets the requirements of Appendix 13
7.11.7.2	**Question 1: Surface casing requirements**			
				Completed *Directive 008* surface casing check sheet, pressure survey and gradient documentation
				Supporting information for the surface casing reduction type selected
				Documentation showing the Base of groundwater from DDS
				Description of the method proposed to protect the groundwater
				Copy of waiver granted by ERCB Operations
7.11.7.3	**Question 2: Directional Survey Requirements**			
				No documentation required
7.11.8	**Step 8: Well Classification**			
				Copy of drill cutting waiver granted by ERCB Geology and Reserves
7.11.9	**Step 9: Minerals**			
7.11.9.1	**Question 1: Rights for all intended purposes**			
				Mineral rights lease number (Crown minerals)
				Documentation that authorization has been obtained from the mineral rights owner or lessee for injection or water source wells
				Documentation that authorization has been obtained for leased Crown minerals
				Documentation that authorization has been obtained for Freehold minerals
7.11.9.2	**Question 2: Rights for the complete drill spacing unit**			
				Mineral rights lease number(s) for leases covering the entire DSU (Crown minerals)
				Documentation that demonstrates Freehold minerals have been acquired for the entire DSU (continued)

Table 7.6. Well application audit checklist (concluded)

Section No.	Y	N	N/A	Audit documents
7.11.11	**Step 11: Surface Impact**			
7.11.11.1	**Question 1: Water body setback requirements**			
				Documentation outlining the steps that will be taken to ensure that the water body is protected and that all ERCB requirements are met
7.11.11.2	**Question 1a: Other setback requirements**			
				Documentation confirming that consent from the surface improvement owner was received prior to application
7.11.11.3	**Question 2: Environmental requirements**			
				Documentation outlining steps that will be taken to ensure the protection of the environment and that all ERCB requirements are met. For CBM wells completed above the base of groundwater protection, the additional audit documents indicated in Appendix 13
7.11.11.4	**Question 3 and 3a: *Historical Resources Act* (Freehold land only)**			
				Alberta Community Development approval dated prior to application

Section No.	Y	N	N/A	Audit documents
7.12	**Schedule 4.3**			
7.12.1	**Steps 1 and 2: H_2S Release Rate**			
				Map showing size and location of the search area
				A geological well prognosis and comprehensive geological discussion for all prospective formations/zones
				Geological mapping for primary and secondary targets that may contain H_2S gas
				An engineering discussion for each potentially productive zone that may contain H_2S gas
				Tabulated data that provides the results of H_2S concentration and AOF rate reviews
				If an H_2S release rate assessment presubmission was made, a letter issued by ERCB Geology and Reserves
7.12.2	**Step 2: Cumulative H_2S Release Rate**			
7.12.2.1	**Question 1: Intermediate Casing**			
				Depth to which intermediate casing will be set
				Copy of casing waiver (if applicable)
7.12.5	**Step 5: Critical Well**			
7.12.5.1	**Question 1: Drilling Critical Wells**			
				A detailed drilling plan based on the requirements in *ID 97-06*, *Directive 036*, and IRP Volume 1, including a table of contents
				Waiver/approval obtained from EUB Operations

Table 7.7. Well Application nonroutine checklist

Question No.	Y	N	N/A	Nonroutine Submission Documents
Step 2: Participant Involvement Requirements				
Question 1: Consultation and notification requirements have been met				
				The participant involvement summary of all personal consultation and notification that have been completed
				Name, address, telephone number, and legal land description of participants for which personal consultation and notification requirements have not been completed
				Detailed explanation of why all personal consultation and nonobjection requirements cannot be completed
				Detailed explanation of why all notification requirements cannot be completed
				An explanation of how you would like the ERCB to proceed with your application
Question 2: There are outstanding objection/concerns related to this application				
				Name, address, telephone number, and legal land description of all participant(s) with outstanding concerns/objections
				Copy of the written concern/objection (or summary of issues if not available)
				A chronology of the participant involvement program conducted with the party
				A discussion of steps taken to mitigate the outstanding concerns/objections
				Copy of the applicant's project-specific information package
				List of other documents distributed
				Documentation in support of the Battle Lake application requirements (Section 8)
				Explanation of how you would like the ERCB to proceed with your application
				If there are residents within the EPZ, you must also attach • the assessment of existing infrastructure required by Section 8.3.2 • the updated expanded project-specific information package, as described in Section 8.3.2 • a copy of an area plan as described in Section 8.3.3 if it was completed
Step 6: Reentry/Resumption/Deepening of a Well				
Question 3: The applicant has the rights to the existing wellbore				
				Detailed explanation as to why you do not have the rights to the existing wellbore
Question 4: Casing will meet the minimum casing testing requirements				
				Detailed explanation and confirmation with regard to items 30 (a) through (i) in Section 7.10.4
Step 7: Well Detail				
Question 1: Surface casing meets the requirements of *Directive 008*				
				Detailed explanation, including a copy of surface casing approval/waiver (if already issued)
				Geological data

(continued)

Table 7.7. Well Application nonroutine checklist (concluded)

Question No.	Y	N	N/A	Nonroutine Submission documents
				Thermal scheme information (if applicable)
				Operational discussion within 3 km
				Area map
Question 2: A direction survey will be run if the well deviates from vertical				
				Explanation of why a directional survey will not be run when well deviates from vertical
Step 8: Well Classification				
Question 1a: If YES, drill cutting samples will be collected and submitted as required				
				Copy of drill cuttings approval/waiver (if available)
				Lahee classification
				Well location, terminating formation, and total depth
				List of control wells with sample coverage over producing interval
				Detailed reason for a waiver
Step 9: Minerals				
Question 1: The applicant has the rights for all intended purposes of the proposed well				
				Detailed explanation of why mineral rights have not been obtained
Question 2: The applicant has the rights to a complete drilling spacing unit				
				Detailed explanation of why mineral rights have not been obtained for the entire drilling spacing unit
Step 11: Surface Impact				
Question 1: The ERCB water body setback requirements have been met				
				Detailed explanation of why water body setback requirements cannot be met
				Description of methods to protect the water body
Question 1a: All other ERCB setback requirements have been met				
				Detailed explanation and, if required, consent of the surface improvement owner and/or the approval from the Freehold lessee/owner
				Landowner confirmation of nonobjection with regard to setbacks
Question 2: The proposed well site and/or access road will meet ERCB environmental requirements				
				Detailed explanation as to why environmental requirements cannot be met
				Explanation of the mitigative measures to be in place during drilling and production operations to protect the environment
				If the well is located within the area affected by *IL 93-09*, you must attach all materiel required by that IL
Question 3a: If YES, Alberta Community Development has granted clearance for the well site (Freehold land only)				
				Detailed explanation as to why Alberta Community Development has not provided clearance

Well Application

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 4

Well Licence Application

DAY | MONTH | YEAR ______ ERCB APPLICATION NUMBER ______ APPLICANT'S REFERENCE ______

1. IDENTIFICATION

Company Name ________________________ Applicant BA Code __________

Purpose of Application: ☐ New ☐ Re-entry/Resumption ☐ Deepening ☐ Licence Amendment

2. PARTICIPANT INVOLVEMENT REQUIREMENTS

1. Consultation and notification requirements have been met: Public .... YES ☐ **NO** ☐
2. There are outstanding objections/concerns related to this application .... **YES** ☐ NO ☐
3. Distance to nearest surface development ________km

3. EMERGENCY RESPONSE PLANNING

1. The applicant will meet ERCB requirements for emergency response planning .... YES ☐

4. LICENCE AMENDMENT ONLY

Check all that apply:
- ☐ Surface Location
- ☐ Surface Coordinates
- ☐ Bottomhole Location
- ☐ Ground Elevation
- ☐ Total Depth
- ☐ Terminating Formation
- ☐ Mineral Rights
- ☐ Surface Rights
- ☐ Schedule 4.3

Change of purpose: ☐ Regulation Section ☐ Well Type Original Licence Number W ___________

5. WELL PURPOSE

Category Type_____

Regulation Section ☐ Section 2.020 ☐ Section 2.030 ☐ Section 2.040

WELL TYPE	SUBSTANCE NAME	FORMATION CODE	FORMATION NAME

1. The proposed well is part of an experimental, primary or commercial crude bitumen scheme .... YES ☐ NO ☐

If YES, Scheme Approval Number____________ Expiry Date (experimental schemes only)__________(DAY/MONTH/YEAR)

6. RE-ENTRY/RESUMPTION/DEEPENING OF A WELL

Original Licence Number W ____________

1. The applicant is the licensee of the well .... YES ☐ NO ☐
2. The well is currently abandoned .... YES ☐ NO ☐
3. The applicant has the rights to the existing wellbore .... YES ☐ **NO** ☐
4. Casing will meet the minimum casing testing requirements .... YES ☐ **NO** ☐

If you check a BOLD response, you must attach supporting information.

(Schedule 4 continued on next page)

Schedule 4, page 2 Company Name ____________________ APPLICANT'S REFERENCE ____________________

7. WELL DETAIL

If you are filing a multiwell pad application, attach a completed Schedule 4.2.

Bottomhole Location	Type of Drilling Operation	Surface Location	Surface Coordinates			
			N/S Distance	N/S Designation	E/W Distance	E/W Designation
LSD SEC TWP RGE _ _ _ _ W _ M		LSD SEC TWP RGE _ _ _ _ W _ M				

Well Name:

Surface Casing Depth (m)	Projected Total Depth (m)	True Vertical Depth (m)	Ground Elevation (m)	Mineral Rights

Terminating Code	Terminating Formation Name	Surface Latitude (NAD 83)	Surface Longitude (NAD 83)

1. Surface casing meets the requirements of *Directive 008* .... YES ☐ **NO** ☐ N/A ☐
2. A directional survey will be run if the well deviates from vertical .... YES ☐ **NO** ☐

8. WELL CLASSIFICATION

Lahee Classification

If Lahee classification is "Deeper Pool Test," well will be exploratory below:

Code	Formation Name	Depth (m)

Confidential Status

If status is "Confidential Below," well will be confidential below:

Code	Formation Name

1. Drill cutting samples are required to be taken .... YES ☐ NO ☐

1a. If YES, drill cutting samples will be collected and submitted as required .... YES ☐ **NO** ☐

1b. If required to be collected and submitted, drill cutting samples will be provided as follows:

Code	From Formation Name/Casing	Depth (m)

Code	To Formation Name/Casing	Depth (m)

9. MINERAL RIGHTS

1. The applicant has the rights for all intended purposes of the proposed well .... YES ☐ **NO** ☐
2. The applicant has the rights to a complete drilling spacing unit .... YES ☐ **NO** ☐

10. SURFACE RIGHTS

1. The surface owner is ☐ Alberta Crown ☐ Freehold

11. SURFACE IMPACT

1. The ERCB water body setback requirements have been met .... YES ☐ **NO** ☐

1a. All other ERCB setback requirements have been met .... YES ☐ **NO** ☐

2. The proposed well site and/or access road will meet the ERCB environmental requirements .... YES ☐ **NO** ☐
3. The proposed well site requires *Historical Resources Act* clearance (Freehold land only) .... YES ☐ NO ☐

3a. If YES, Alberta Community Development has granted clearance for the well site (Freehold land only) .... YES ☐ **NO** ☐

12. WORKING INTEREST PARTICIPANTS

1. The licensee is the only working participant. If NO, attach a completed Schedule 4.1 .... YES ☐ NO ☐

13. OPERATIONAL DISCLOSURE

1. Underbalanced drilling operations will be conducted .... YES ☐ NO ☐
2. The well will encounter reservoirs that will be subject to enhanced recovery or acid gas injection schemes, or CO_2 greater than 1 per cent in the producing formation .... YES ☐ NO ☐

7.13 How to Complete Well Licence Application Schedules

7.13.1 How to Complete Schedule 4: Well Licence Application

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Identification

Company Name	Enter the full corporate name of the applicant.
Applicant BA Code	Enter the 4-digit business associate (BA) code issued to your company by the ERCB.
Purpose of Application	Select the appropriate box to indicate whether this application is for a new single well, a re-entry/resumption, a deepening, or an amendment of an existing well licence. If your application is for a multiwell pad location or a scheme of observation wells, you must complete and submit Schedule 4.2 with your application. If your application is for a Category C, D, or E well or multiwell pad, you must complete and submit Schedule 4.3 with your well licence application. To change an oil sands evaluation well (within 30 days of drilling) to a conventional producing well, select the Licence Amendment option; see Step 5: Well Purpose—Regulation Section.
New	Select this box if you are applying for a new well.
Re-entry/Resumption	Select this box if you are not the current licensee of record and are applying to re-enter a well or you are the licensee of the well and plan to resume drilling after original rig release. See Step 6: Re-Entry/Resumption/Deepening of a Well.
Deepening	Select this box if you are applying to deepen a well while the rig is on hole, resulting in an increase in the well category (e.g., from B to C, or C to D; see Table 7.1). For other deepenings, also see Step 6: Re-Entry/Resumption/Deepening of a Well.
Licence Amendment	Select this box if you are amending a previously issued well licence prior to spud or rig release. See Step 4: Licence Amendment Only.

Step 2: Participant Involvement Requirements

*If you check a **BOLD** response, you must attach supporting information.*

1. Consultation and notification requirements have been met: Public	YES means all applicable requirements as outlined in Table 7.1 and the participant involvement requirements of Sections 2 and 7.8 and in *IL 82-11* have been met prior to application submission. **NO** means that due to exceptional circumstances, all applicable requirements as cited above have not been met. This includes being

unable to contact a party or receive confirmation of nonobjection, as required.

If **NO**, you must attach

- the participant involvement summary of all personal consultation and notification that has been completed;
- the name, address, telephone number, and legal land description of participants for which personal consultation and notification requirements have not been completed;
- a detailed explanation of why all personal consultation and nonobjection requirements cannot be completed;
- a detailed explanation of why all notification requirements cannot be completed;
- an explanation of how you would like the ERCB to proceed with this application.

The ERCB will review the circumstances and decide if an exemption is warranted.

2. There are outstanding concerns/objections related to this application.

YES means there are outstanding concerns and/or objections.

If **YES**, you must attach

- the name, address, telephone number, and legal land description of the party with outstanding concerns/objections;
- a copy of written concerns/objections received, if available;
- a chronology of the participant involvement program conducted with the party;
- a discussion of steps taken to mitigate the outstanding concerns/objections;
- a copy of the project-specific information package provided;
- a list of other documents distributed; and
- an explanation of how you would like the ERCB to proceed with your application.

If there are residents within the EPZ, you must also attach

- the assessment of existing infrastructure required by Section 8.3.2;
- the updated expanded project-specific information package, as described in Section 8.3.2; and
- a copy of an area plan, as described in Section 8.3.3, if it was completed.

YES also means the proposed well is located within the Tier 1 area of Battle Lake and the documentation required by Section 8.2 is attached.

The ERCB will review the circumstances and decide if an exemption is warranted.

NO means there are no outstanding concerns/objections.

3. Distance to nearest surface development	Enter the distance to the nearest surface development in kilometres (km) to 2 decimal places. For remote locations you may record the distance to the nearest urban centre. This distance cannot be less than the distance to the nearest surface development.

Step 3: Emergency Response Planning

1. The applicant will meet ERCB requirements for emergency response planning.	YES means the corporate or specific emergency response plan will meet the requirements of *Directive 071*.

Step 4: Licence Amendment Only

Refer to Step 6 if you are resuming drilling operations after rig release, re-entering an abandoned well, or deepening a well while on hole, which results in a change in category type (e.g., B140 to C280).

The following provides further clarification.

Before construction or spud date:

- If the category type is changing before the well is spudded, request that the ERCB cancel the original licence and reapply for a new well licence. Note that applicant's consultation/notification must be completed for a new category type.
- Any other revisions to the licence may be done by completing a licence amendment application and completing this step.

While on hole:

When you are applying for a deepening of the well greater than 150 m or any deepening resulting in a change to the terminating formation and there are no changes to the category type, file a licence amendment application and complete this step.

Check all that apply	Check all the boxes that apply to your well licence amendment application.
Surface Location	Check this box to indicate a change in surface location of the well within the same drilling spacing unit. Enter the new surface location, surface location coordinates, surface latitude, and surface longitude in Step 7: Well Detail. You must submit a revised survey plan with your amendment application.
Surface Coordinates	Check this box to indicate a change in the surface coordinates of the well. Enter the new surface coordinates, latitude, and longitude in Step 7: Well Detail. You must submit a revised survey plan with your amendment application.
Bottomhole Location	Check this box to indicate a change in bottomhole location of the well. Enter the new bottomhole location in Step 7: Well Detail. You must submit a revised survey plan with your amendment application.

Ground Elevation	Check this box to indicate a change in ground elevation. Enter the new ground elevation for the well in Step 7: Well Detail. You must submit a revised survey plan with your amendment application.
Total Depth	Check this box to indicate an increase in total depth for the well. Enter the new projected total depth in Step 7: Well Detail. If the well is not a vertical well, also enter the projected true vertical depth.
Terminating Formation	Check this box to indicate a change in terminating formation for the well. Enter the new terminating formation in Step 7: Well Detail. You must also identify that you have the mineral rights to the new terminating formation in Step 9: Mineral Rights.
Mineral Rights	Check this box to indicate a change to the mineral ownership record for the well. Enter the identity of the mineral rights owner (head lessor) in Step 7: Well Detail.
Surface Rights	Check this box to indicate a change to the Crown or Freehold surface ownership and enter the surface right owner for the well in Step 10: Surface Rights.
Schedule 4.3	Check the box to indicate a change to data initially recorded on Schedule 4.3.
Change of Purpose	Check the appropriate box to indicate a change of purpose for the well. Enter the new well purpose in Step 5: Well Purpose. You must change an Oil Sands Evaluation well within 30 days from the drilling of the well licence. This also requires a regulation change in Step 5: Well Purpose.
Regulation Section	Check this box to indicate a change in the section of the *OGCR* for the well purpose. Enter the new Regulation Section in Step 5: Well Purpose.
Well Type	Check this box to indicate a change in the well type. Enter the new well type in Step 5: Well Purpose.
Original Licence Number	Enter the previously issued well licence number; include all zeros in the 7-digit well licence number. You must record the original licence number when filing a relicense application.

Step 5: Well Purpose

Category Type	Enter the category type of the well from Table 7.1. If you have selected a Category C, D, or E well, you must complete and attach Schedule 4.3 to your application. For Category E wells, you must submit a nonroutine well licence application and all applicable audit documentation.

Regulation Section	Using Table 7.8, check the appropriate box to indicate the section of the *OGCR* that this application is being submitted under.
Section 2.020	Select this box if you are submitting the well licence application under Section 2.020 of the *OGCR* for a conventional well (see Table 7.8).
Section 2.030	Select this box if you are submitting the well licence application under Section 2.030 of the *OGCR* for an oil sands evaluation well, test hole, or an experimental well (see Table 7.8).
Section 2.040	Select this box if you are submitting the well licence application under Section 2.040 of the *OGCR* for a well that will be drilled greater than 150 m to supply water for any purpose (see Table 7.8).
Well Type	Enter the name for the well type from Table 7.87.
Substance Name	Enter the substance name from Table 7.8. Enter "none" if there is no substance involved.
Formation Code	Enter the formation code from Table 7.9.
Formation Name	Enter the corresponding formation name from Table 7.9.
1. The proposed well is part of an experimental, primary, or commercial crude bitumen scheme.	YES means the proposed well is part of an approved experimental, primary, or commercial crude bitumen scheme. NO means the proposed well is not part of an approved experimental, primary, or commercial crude bitumen scheme.
If YES, Scheme Approval Number	If the proposed well is part of an approved scheme, enter the Scheme Approval Number.
Expiry Date (experimental schemes only)	If the proposed well is part of an approved scheme, enter the expiry date (e.g., 15 Jan 2008).

Step 6: Re-Entry/Resumption/Deepening of a Well

Complete this step only if you are resuming drilling operations after rig release, re-entering an abandoned well, or deepening a well while on hole, which results in a change in category type (e.g., B140 to C280).

The following provides further clarification.

While on hole:

- When you are applying for a deepening of the well and there is a change to the category type, file a deepening application and complete this step.
- For any other deepening greater than 150m where the category type does not change, you must file a licence amendment application and complete Step 4.

After rig release or re-entry of an abandoned well:

- File an application for a re-entry/resumption and complete this step.

Original Licence Number	Enter the previously issued 7-digit well licence number.

1. The applicant is the licensee of the well.	YES means you are the current licensee of the well. NO means you are not the current licensee of the well.
2. The well is currently abandoned.	YES means the well is currently abandoned according to ERCB records. NO means the well is not abandoned according to ERCB records.
3. The applicant has the rights to the existing wellbore.	YES means you have the rights to the existing wellbore. **NO** means you do not have the rights to the existing wellbore. If **NO**, you must attach a detailed explanation as to why you do not have the wellbore rights. The ERCB will review the circumstances and decide if an exemption is warranted.
4. Casing will be pressure tested to meet the minimum requirements. (Section 7.10.4)	YES means that prior to commencing re-entry or resumption of drilling operations, the casing will be tested to ensure that it meets the minimum requirements as described for the category and type of well. **NO** means the existing casing will be pressure tested to meet the minimum requirements and a casing inspection log waiver is being requested. If **NO**, you must attach a detailed explanation and provide confirmation with regard to items 28 (a) through (i) in Section 7.10.4. The ERCB will review the circumstances and decide if an exemption is warranted.

Step 7: Well Detail

If you are filing a multiwell pad application, attach a completed Schedule 4.2.

*If you check a **BOLD** response, you must attach supporting information.*

Bottomhole Location	Enter the bottomhole location of the wellbore using the Dominion Land Survey System.
Type of Drilling Operation	Enter the type of drilling operation being conducted (i.e., vertical, directional, horizontal, slant, or natural drift).
Surface Location	Enter the surface location of the wellbore as surveyed using the Dominion Land Survey System.
Surface Coordinates	
N/S Distance	Enter the north/south coordinates for the surface location measured from the well to the outside boundaries of the section containing the well and rounded to the nearest 0.1 m.
N/S Designation	Enter "N" or "S", as appropriate, to designate the direction of measurement from the well to the section boundary.
E/W Distance	Enter the east/west coordinates for the surface location measured from the well to the outside boundaries of the section containing the well and rounded to the nearest 0.1 m.
E/W Designation	Enter "E" or "W", as appropriate, to designate the direction of measurement from the well to section boundary.
Well Name	Well names are created by EAS to be consistent with *OGCR* Section 13.020. Applicants should not change the well name created by EAS

	and only indicate or add the optional particulars required to distinguish the proposed well to a maximum of 36 characters,
Surface Casing Depth	Enter the total depth of the surface casing to the nearest metre.
Projected Total Depth	Enter the projected total depth to the nearest metre.
True Vertical Depth	Enter the true vertical depth to the nearest metre if the well is expected to deviate from vertical.
Ground Elevation	Enter the surveyed ground elevation rounded to the nearest 0.1 m.
Mineral Rights	Enter "Alberta Crown," "Freehold," or "Both," as appropriate. For the purpose of the application, the ERCB considers "Federal Crown" minerals as "Freehold".
Terminating Code	Enter the code of the deepest formation in which the well will terminate and where you are entitled to the right to produce (see Table 7.8). Do not record the 15 m overhole formation as the terminating formation unless you hold the mineral rights for this formation.
Terminating Formation Name (Section 7.10.5)	Enter the name of the deepest formation in which the well will terminate and where you are entitled to the right to produce (see Table 7.8).
Surface Latitude	Enter the latitude in decimals of degrees to 6 decimal places based on the North American Datum 1983 (NAD 83) for the surface location of the well.
Surface Longitude	Enter the longitude in decimals of degrees to 6 decimal places based on NAD 83 for the surface location of the well.
1. Surface casing meets the requirements of *Directive 008*. (Section 7.10.9)	YES means the proposed surface casing meets the requirements of *Directive 008*. **NO** means the proposed surface casing will not meet the requirements of *Directive 008*. If **NO**, you must attach a detailed explanation, including an area search for AOF data and a geological, thermal, and operational discussion. The ERCB will review the circumstances and decide if an exemption is warranted. N/A means there is no *Directive 008* requirement (e.g., the well licence application is to re-enter an existing wellbore).
2. A directional survey will be run if the well deviates from vertical.	YES means a directional survey will be run if the well deviates from vertical. **NO** means a directional survey will not be run if the well deviates from vertical. If **NO**, you must attach a detailed explanation. The ERCB will review the circumstances and decide if an exemption is warranted.

Step 8: Well Classification

Lahee Classification (Section 7.10.6)	Enter the appropriate Lahee classification for the proposed well, using Table 7.10.
If Lahee classification is "Deeper Pool Test," well will be exploratory below:	
Code	Enter the code of the formation below which the proposed well will be exploratory, using Table 7.9.
Formation Name	Enter the name of the formation below which the proposed well will be exploratory, using Table 7.9.
Depth	Enter the projected depth of the base of the formation below which the proposed well will be exploratory to the nearest metre.
Confidential Status (Section 7.10.7)	Enter the confidential status of the proposed well, using Table 7.11.
If status is "Confidential Below," well will be confidential below:	
Code	Enter the code of the formation below which the proposed well will be confidential, using Table 7.9.
Formation Name	Enter the name of the formation below which the proposed well will be confidential, using Table 7.9.
1. Drill cutting samples are required to be taken. (Section 7.10.8)	YES, means drill cutting samples are required to be taken, as outlined in Section 7.10.8 and *OGCR* Section 11.010. NO means drill cutting samples are not required to be taken.
1a. If YES, drill cutting samples will be collected and submitted as required.	YES means drill cutting samples will be collected and submitted as required. **NO** means drill cutting samples will not be collected and submitted as required. If **NO**, you must attach a detailed explanation that includes • Lahee classification, • well location, • terminating formation, • total depth of well, • a list of control wells with sample coverage over the producing interval, and • the reason for a drill cuttings sample waiver. The ERCB will review the circumstances and decide if an exemption is warranted.
1b. If required to be collected and submitted, drill cutting samples will be provided as follows:	If drill cutting sample collection and submission are ended and then resumed deeper in the well, repeat the following procedure for the next, deeper interval in the second row provided.

Code	Enter the code of the formation from Table 7.9 or the casing type 30 m above which submission of drill cutting samples begins.
From Formation Name/Casing	Enter the name of the formation from Table 7.9 or the casing depth 30 m above which submission of drill cutting samples begins.
Depth	Enter the proposed depth to the nearest metre at which drill cutting sample collection submission begins.
Code	Enter the code from Table 7.9 of the formation 30 m below which sample collection and submission ends, or enter total depth, if that is where sample collection ends.
To Formation Name/Casing	Enter the name of the formation from Table 7.9 or the casing depth 30 m below which sample collection and submission ends, or enter total depth, if that is where sample collection ends.
Depth	Enter the proposed depth to the nearest metre where drill cutting sample collection and submission end.

Step 9: Mineral Rights

If you check a ***BOLD*** *response, you must attach supporting information.*

1. The applicant has the rights for all intended purposes of the proposed well. (Section 7.10.11)	YES means you have acquired the right to produce from the intended formation(s) or the right to drill and operate the well, as stated in the well purpose for the complete drilling spacing unit and as required for Freehold lands by the Alberta Department of Energy (DOE) *Mines and Mineral Act*, Sections 53 and 54, and DOE *Informational Letter (IL) 92-09* and *IL 94-21* for Crown minerals. **NO** means that due to exceptional circumstances, all applicable requirements as cited above have not been met. If **NO**, you must attach a detailed explanation of why you do not have the mineral rights. The ERCB will review the circumstances and decide if an exemption is warranted.
2. The applicant has the rights to a complete drilling spacing unit. (Section 7.10.11)	YES means that you have secured the rights to a complete drilling spacing unit. Yes also means that for injection/disposal wells, observation wells, and water source wells, you have authorization from the mineral rights owner or lessee for the stated purpose. **NO** means that you have not secured the rights to a complete drilling spacing unit. If **NO**, you must attach a detailed explanation of the reason you do not have the entire drilling spacing unit. The ERCB will review the circumstances and decide if an exemption is warranted. If you do not have all mineral rights for the entire drilling spacing unit and you are awaiting other ERCB approvals (e.g., reduced spacing application), your application may be premature. In these instances, you should not submit your well licence application unless you can meet current spacing requirements.

Step 10: Surface Rights

1. The surface owner is

Check the appropriate box to indicate whether the surface owner is Crown or Freehold.

Step 11: Surface Impact

*If you check a **BOLD** response, you must attach supporting information.*

1. The ERCB water body setback requirements have been met.
(Section 7.10.12.1)

YES means that the well will meet the applicable water body setback requirements stated in Section 7.10.12.1 or that there is no water body located less than 100 m from a well centre.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

If **NO**, you must attach an explanation as to why you cannot meet the water body setback requirements and include the methods to protect the water body. The ERCB will review the circumstances and decide if an exemption is warranted.

1a. All other ERCB setback requirements have been met.
(Sections 7.10.12.2 to 7.10.12.5)

YES means the proposed well will meet all applicable surface improvement setback requirements outlined in Sections 7.10.12.2 to 7.10.12.5.

NO means

- that due to exceptional circumstances, all applicable requirements as cited above have not been met; or
- the surface improvement is not a pipeline/utility right-of-way, gas co-op right-or-way, or a private access; or
- you are not able to acquire the consent of the surface improvement owner.

If **NO**, you must attach a detailed explanation and if required include consent of the surface improvement owner and/or the approval from the Freehold lessee/owner. The ERCB will review the circumstances and decide if an exemption is warranted.

2. The proposed well site and/or access road will meet ERCB environmental requirements.
(Section 7.10.13)

YES means the proposed well site or access road will meet all applicable environmental requirements stated in Section 7.10.13.

NO means that due to exceptional circumstances, all applicable requirements as cited above have not been met.

NO also means that the proposed well is located within the Eastern Slopes (Southern Portion), as defined by *IL 93-09*.

If **NO**, you must attach a detailed explanation as to why you cannot meet the requirements described in Section 7.10.13 and what mitigative measures will be in place. If the facility is located within the area affected by *IL 93-09*, you must attach all material required by that IL. The ERCB will review the circumstances and decide if an exemption is warranted.

3. The proposed well site requires *Historical Resources Act* clearance (Freehold land only). (Section 7.10.14)	YES means the proposed well site requires clearance by Alberta Community Development, in accordance with the *Historical Resources Act*. NO means that the proposed well site does not require clearance by Alberta Community Development.
3a. If YES, Alberta Community Development has granted clearance for the well site (Freehold land only).	YES means Alberta Community Development has granted clearance for the proposed well site. **NO** means Alberta Community Development has not granted clearance for the proposed well site. If **NO**, you must attach a detailed explanation as to why Alberta Community Development has not provided clearance. The ERCB will review the circumstances and decide if an exemption is warranted.

Step 12: Working Interest Participants

1. The licensee is the only working participant.	YES means that at the time of application you are the 100 per cent working interest participant in the proposed well. NO means that at the time of application you are not the only working interest participant in the proposed well. You must fill out Schedule 4.1, identifying all of the working interest participants and their percentage interest in the proposed well, totalling 100 per cent, and attach a completed Schedule 4.1.

Step 13: Operational Disclosure

1. Underbalanced drilling operations will be conducted. (*ID 94-03*)	YES means that underbalanced drilling operations will be conducted and you will meet the requirements described in *ID 94-03* and *Directive 010*, as well as in IRP Volume 6 if Category E well. NO means that underbalanced drilling operations will not be conducted.
2. The well will encounter reservoirs that will be subject to enhanced recovery or acid gas injection schemes or to CO_2 greater than 1 per cent in the producing formation.	YES means that the well will encounter at least one reservoir subject to • an enhanced recovery scheme, • an acid gas injection or disposal scheme, • an unusual or atypical reservoir scenario that may impact the H_2S release rate assessment for the well, or • CO_2 gas present in a volume greater that 1 per cent in the producing formation. NO means that the well will not encounter a reservoir as described above.

Table 7.8. Regulation, well type, and substance

Oil and Gas Conservation Regulation, Section 2.020					
Well type	**Code**	**Substance name**	**Code**	**Lahee options**	**Confidential options**
Evaluation	02	Miscellaneous	98	OTH	NC
		None		OTH	NC
Injection	04	Gas	02	DSW	CT, CB, NC
		Water	06	DSW	CT, CB, NC
				OTH	NC
		Brine	07	OTH	NC
		Waste	08	OTH	NC
		LPG	16	DSW	CT, CB, NC
		Coalbed methane	22	DSW	CT, CB, NC
			65	DSW	CT, CB, NC
				OTH	NC
Observation	05	Crude oil	01	DSW	CT, CB, NC
		Gas	02	DSW	CT, CB, NC
		None		DSW	CT, CB, NC
Production	07	Crude oil	01	NFW, NPW	CT
				DPT, OUT, DEV	CT, CB, NC
		Gas	02	NFW, NPW	CT
				DPT, OUT, DEV	CT, CB, NC
		Brine	07	OTH	NC
		Crude bitumen	17	DEV	NC
		Coalbed methane	22	NFW, NPW	CT
				DPT, OUT, DEV	CT, CB, NC
Production (Scheme)	08	Crude bitumen	17	DEV	NC
Storage	09	Gas	02	OTH	NC
		LPG	16	OTH	NC
Training	11	None		OTH	NC
***OGCR*, Section 2.030**					
Well type	**Code**	**Substance name**	**Code**	**Lahee options**	**Confidential options**
Experimental	03	None		EX	CT
Oil Sand Evaluation	06	Crude bitumen	17	OV	CT
Test	10	None		TH	CT
***OGCR*, Section 2.040**					
Well type	**Code**	**Substance name**	**Code**	**Lahee options**	**Confidential options**
Domestic	01	Water	06	OTH	NC
Observation	05	Water	06	OTH	NC
Production	07	Water	06	OTH	NC

Table 7.9. Formation codes and names*

	Name	Code	Code	Code	Name	Code	Name
1440	ALBERTA GRP	6680	CROSSFIELD MBR	1270	JUDITH RIVER FM	3400	POPLAR SD
6720	ALEXO FM	3020	CUMMINGS MBR	1840	JUMPING POUND MBR SS	0620	PORCUPINE HILLS FM
6940	ARCS MBR	3440	CUTBANK SS	4500	JURASSIC DETRITAL	1880	POUCE COUPE MBR
1660	BADHEART FM	7010	CYNTHIA MBR	4000	JURASSIC SYSTEM	7860	PRAIRIE EVAPORITE FM
6460	BAKKEN FM	5180	DAIBER GRP	4010	JURASSIC-TRIASSIC	9800	PRECAMBRIAN SYSTEM
5060	BALDONNEL FM	3420	DALHOUSIE CGL	1820	KASKAPAU FM	2200	PROVOST MBR
6440	BANFF FM	6120	DEBOLT FM	7880	KEG RIVER FM	1520	PASKWASKAU FM
3170	BANTRY SHALE	3500	DETRITAL=CRET=	7890	KEG RIVER SS	2880	REX MBR
2040	BARONS SD	6500	DEVONIAN SYSTEM	6060	KISKATINAW FM	4240	RIERDON FM
1340	BASAL BELLY RIVER SD	3220	DINA MBR	1180	KNEEHILLS TUFF ZONE	4320	ROCK CREEK GRP
3180	BASAL BLAIRMORE	1900	DOE CREEK MBR	4020	KOOTENAY GRP	6100	RUNDLE GRP
2420	BASAL COLORADO SD	5200	DOIG FM	1400	LEA PARK FM	4280	SAWTOOTH FM
3190	BASAL CRETACEOUS	1920	DUNVEGAN FM	7200	LEDUC FM	1050	SCOLLARD FM
3270	BASAL GETHING	7280	DUVERNAY FM	6280	LIVINGSTONE FM	1860	SECOND WHITE SPECKS
3200	BASAL MANNVILLE	1060	EDMONTON GRP	2940	LLOYDMINSTER MBR	1960	SHAFTESBURY FM
3340	BASAL QUARTZ SD	9220	ELDON FM	8040	LOTSBERG FM	4340	SHAUNAVON FM
8060	BASAL RED BEDS	7700	ELK POINT GRP	2110	LOWER COLORADO SAND	6400	SHUNDA FM
9480	BASAL SANDSTONE UNIT	6380	ELKTON MBR	7170	LOWER IRETON	7580	SLAVE POINT FM
2060	BASE FISH SCALES ZONE	6390	ELKTON-SHUNDA	3100	LOWER MANNVILLE FM	1460	SMOKEY RIVER GRP
0010	BASE OF DRIFT	3360	ELLERSLIE MBR	3350	LOWER MANNVILLE SD	2760	SPARKY MBR
0100	BASE OF SURFACE CASING	4180	ELLIS GRP	2960	LUSCAR FM	2640	SPIRIT RIVER FM
2470	BEAVER MINES FM	8020	ERNESTINA LK FM	9030	LYNX GROUP	5120	SPRAY RIVER GRP
7440	BEAVERHILL LAKE GRP	6480	EXSHAW FM	7400	MAJEAU LAKE FM	2540	ST. EDOUARD MBR
5560	BELLOY FM	6880	FAIRHOLME GRP	7800	MANNING SD	1100	ST. MARY RIVER FM
1260	BELLY RIVER GRP	2720	FALHER A	2480	MANNVILLE GRP	6660	STETTLER FM
6600	BIG VALLEY FM	2715	FALHER MBR	2680	MCLAREN MBR	6040	STODDART FM
1800	BLACKSTONE FM	4140	FERNIE GRP	3280	MCMURRAY FM	7810	SULPHUR POINT FM
2440	BLAIRMORE GRP	7540	FIREBAG MBR	1640	MEDICINE HAT SD	3320	SUNBURST SD
6800	BLUERIDGE MBR	1620	FIRST WHITE SPECKS	1580	MILK RIVER FM	3330	SUNBURST SWIFT
3040	BLUESKY FM	2020	FISH SCALE SD	6000	MISSISSIPPIAN SYSTEM	0002	SURFACE (TOP HOLE)
3052	BLUESKY-BULLHEAD	2000	FISH SCALE ZONE	7480	MOBERLY MBR	7560	SWAN HILLS MBR
3050	BLUESKY-GETHING	1320	FOREMOST FM	5240	MONTNEY FM	4200	SWIFT FM
5100	BOUNDARY MBR	2630	FORT AUGUSTUS FM	4120	MOOSE MOUNTAIN MBR	3460	TABER SD
2120	BOW ISLAND FM	7120	FORT SIMPSON FM	4110	MORRISSEY FM	6050	TAYLOR FLAT FM
2130	BOW ISLAND SD	1940	FORT ST JOHN GRP	6640	MORRO MBR	0500	TERTIARY SYSTEM
1280	BRAZEAU FM	7620	FORT VERMILLION MBR	3300	MOULTON SD	5220	TOAD FM
1370	BROSSEAU MBR	1040	FRENCHMAN FM	6140	MOUNT HEAD FM	5230	TOAD-GRAYLING
3240	BULLHEAD GRP	2860	GENERAL PETROLEUM MBR	9460	MOUNT WHYTE FM	9999	TOTAL DEPTH
3480	CADOMIN FM	3260	GETHING FM	2260	MOUNTAIN PARK FM	5000	TRIASSIC SYSTEM
2320	CADOTTE MBR	7780	GILWOOD MBR	7820	MUSKEG FM	6300	TURNER VALLEY FM
							(continued)

Table 7.9. Formation codes and names* (concluded)

	Name	Code	Code	Code	Name	Code	Name
6860	CALMAR FM	3000	GLAUCONITIC SS	4080	NIKANASSIN FM	2500	UPPER MANNVILLE FM
9000	CAMBRIAN SYSTEM	6080	GOLATA FM	6960	NISKU FM	2840	VERMILLION SD
7080	CAMBROSE TONGUE=DOL=	6780	GRAMINIA FM	4440	NORDEGG MBR	1360	VICTORIA MBR
1740	CARDIUM CGL	6790	GRAMINIA-BLUERIDGE	2660	NOTIKEWIN MBR	2140	VIKING FM
1700	CARDIUM FM	2620	GRAND RAPIDS FM	1300	OLDMAN FM	2180	VIKING SANDSTONE
1760	CARDIUM SD	9760	GRANITE WASH	3160	OSTRACOD SS	6580	WABAMUN GRP
9400	CATHEDRAL FM	4350	GRAVELBOURG	3120	OSTRACOD ZONE	6590	WABAMUN-GRAMINIA
5080	CHARLIE LAKE FM	5280	GRAYLING FM	2300	PADDY MBR	3060	WABISKAW MBR
7940	CHINCHAGA FM	2080	GRIT BEDS	1420	PAKOWKI	2780	WAINWRIGHT SD
1540	CHINOOK MBR	7160	GROSMONT FM	5400	PALEOZOIC ERA	1480	WAPIABI FM
7500	CHRISTINA MBR	7060	GROTTO MBR	6540	PALLISER FM	1120	WAPITI GRP
2800	CLEARWATER FM	5160	HALFWAY FM	0640	PASKAPOO FM	2700	WASECA MBR
2810	CLEARWATER SD	2220	HAMILTON LAKE MBR	2280	PEACE RIVER FM	7450	WATERWAYS FM
1070	COALSPUR FM	7220	HAY RIVER FM	7180	PEECHEE MBR	7720	WATT MTN FM
8000	COLD LAKE FM	1200	HORSESHOE CANYON FM	6420	PEKISKO FM	2900	WILRICH MBR
2560	COLONY MBR	7100	IRETON FM	2340	PELICAN FM	7920	WINNIPEGOSIS FM
1600	COLORADO GRP	2920	ISLAY MBR	5500	PERMIAN SYSTEM	6700	WINTERBURN GRP
7960	CONTACT RAPIDS FM	7020	JEAN MARIE FM	5600	PERMO-PENN SYSTEM	7040	WOODBEND GRP
7320	COOKING LAKE FM	6920	JEFFERSON FM	7830	PINE POINT FM	7850	ZAMA MBR
1000	CRETACEOUS SYSTEM	2360	JOLI FOU FM	4400	POKER CHIP SH	9998	UNDEFINED

*The most recent list of formation codes and names is on the ERCB Web site at http://www.ercb.ca/docs/data/codes/fm-alpha.pdf.

Table 7.10. Lahee classification

Code	Type	Code	Type	Code	Type
00	Development	01	Development Service Well	02	Outpost
03	Re-entry	04	Deeper Pool Test	05	New Pool Wildcat
06	New Field Wildcat	09	Other	10	Experimental
11	Evaluation (Oil Sands)	12	Test Hole		

Table 7.11. Confidential status

Code	Status
C	Confidential
NC	Nonconfidential
CB	Confidential Below

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 4.1

Working Interest Participants–Wells

DAY MONTH YEAR

ERCB APPLICATION NUMBER

APPLICANT'S REFERENCE

1. IDENTIFICATION

Company Name ______________________________ Applicant BA Code__________

2. WORKING INTEREST PARTICIPANTS

Company Name	Percentage

7.13.2 How to Complete Schedule 4.1: Working Interest Participants—Wells

You must provide working interest participant information when you are not the 100 per cent interest participant in the proposed well. The applicant must be a working interest participant in the well in order to apply for a well licence.

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2007).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: Identification

Company Name	Enter the full corporate name of the applicant.
Applicant BA Code	Enter the 4-digit business associate (BA) code issued to your company by the ERCB.

Step 2: Working Interest Participants

Company Name	Enter the full corporate name of all working interest participants, including your company name, in the table provided.
Percentage	Enter each participant's percentage of participation in the well. Working interest participation must total 100 per cent.

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 4.2
Multiwell Pad Location

DAY MONTH YEAR

ERCB APPLICATION NUMBER

APPLICANT'S REFERENCE ______________________

Well Name	Bottomhole Location	Drilling Operation	Surface Location (if different)	Surface Coordinates	N/S E/W	Surface Casing Depth (m)	Projected Total Depth (m)	True Vertical Depth (m)	Ground Elevation (m)	Mineral Rights	Surface Latitude (NAD 83) Surface Longitude (NAD 83)
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								
	____W_M		____W_M								

FAC-06-2008-10G

Energy Resources Conservation Board Facilities Applications 640 – 5 Avenue SW, Calgary Alberta T2P 3G4

7.13.3 How to Complete Schedule 4.2: Multiwell Pad Location

You must complete and submit Schedule 4.2 to provide specific data elements for the second and subsequent wells to be drilled from a multiwell pad location, provided the following applies to all wells that are to be drilled:

- The surface location of all wells will be the same legal subdivision or adjoining legal subdivision.
- All wells are the same well type (e.g., injection, production).
- The wells are to be licensed under the same section of the *OGCR*.

You must complete and submit Schedule 4.2 to provide specific data elements for oil and oil sands evaluation wells to be licensed under Section 2.030 of the *OGCR*, provided that

- they are part of the same project, and
- the producing and terminating formations are the same for all wells applied for.

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g.,15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).
Well Name	Well names are created by EAS to be consistent with *OGCR* Section 13.020. Applicants should not change the well name created by EAS and only indicate or add the optional particulars required to distinguish the proposed well to a maximum of 36 characters,
Bottomhole Location	Enter the bottomhole location of the wellbore if different from surface location using the Dominion Land Survey System.
Drilling Operation	Enter the type of drilling operation being conducted (i.e., vertical, directional, horizontal, slant, or natural drift).
Surface Location	Enter the surface location of each well on the pad, if different from the location supplied in Schedule 4: Step 7, as surveyed using the Dominion Land Survey System.
Surface Coordinates	Enter the north/south and east/west coordinates for the surface location measured from the well to the outside boundaries of the section containing the well and rounded to the nearest 0.1 m.
N/S E/W	Enter "N" or "S", "E" or "W", as appropriate, to designate the direction of measurement from the well to the section boundary.
Surface Casing Depth	Enter the surface casing depth rounded to the nearest 0.1 m.
Projected Total Depth	Enter the projected total depth to the nearest metre.

True Vertical Depth	Enter the true vertical depth to the nearest metre if the well is expected to deviate from vertical.
Ground Elevation	Enter the surveyed ground elevation rounded to the nearest 0.1 m.
Mineral Rights	Enter "Alberta Crown," "Freehold," or "Both," as appropriate.
Surface Latitude **Surface Longitude**	Enter the surface location latitude and longitude in decimals of degrees to 6 decimal places based on the North American Datum 1983 (NAD 83).

ERCB Energy Resources Conservation Board

Directive 056 – Schedule 4.3

Well H_2S Information

DAY MONTH YEAR

ERCB APPLICATION NUMBER

APPLICANT'S REFERENCE

1. H_2S RELEASE RATE WELL PROGNOSIS BY POTENTIAL H_2S HORIZON

Formation Code	Formation Name	Drilling Case* (m^3/s)	Completion/Servicing Case (m^3/s)	Suspended/Producing Case (m^3/s)

* Include formation encountered at total depth when completing drilling case.

2. CUMULATIVE H_2S RELEASE RATE (RR)

	Drilling Case (m^3/s)	Completion/Servicing Case (m^3/s)	Suspended/Producing Case (m^3/s)
Maximum Cumulative H_2S RR			

1. Intermediate casing to be set .... YES ☐ NO ☐
2. Maximum H_2S concentration encountered in well ________ ppm ________ mol/kmol ________ %
3. Anticipated suspended/producing level as per *ID 97-06* ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ N/A

3. CALCULATED EMERGENCY PLANNING ZONE (EPZ)

	Drilling Case (km)	Completion/Servicing Case (km)	Suspended/Producing Case (km)
Maximum calculated EPZ			
Number of occupied dwellings, public facilities, and/or places of business inside the calculated EPZ			

1. Distance to nearest surface development ____________ km
2. Distance to nearest urban centre ____________ km
3. A site-specific ERP is required .... YES ☐ NO ☐

3a. If YES, the ERP has been submitted to the Air and Safety Compliance Section .... YES ☐ NO ☐

4. CRITICAL WELL ONLY

1. All equipment and practices for the drilling of this well will meet or exceed the requirements of *ID 97-06* and IRP Volume 1 .... YES ☐ NO ☐

7.13.4 How to Complete Schedule 4.3: Well H_2S Information

You must complete a separate Schedule 4.3 for each Category C, D, and E well or well pad licence application.

For well pad licence applications, you must choose the maximum cumulative H_2S release rate assessment values for the entire pad. You may choose to file separate well or well pad licence applications if you do not wish to accept the maximum cumulative H_2S release assessment rate value for the entire pad.

Date	Enter the date on which you will submit this schedule to the ERCB in the upper left corner (e.g., 15 Jan 2008).
Applicant's Reference	Enter your own file reference in the designated area (optional).

Step 1: H_2S Release Rate Well Prognosis by Potential H_2S Horizon (Section 7.10.15)

You must address the H_2S potential of all prospective formations encountered by the well. If your analysis has determined that there is no potential to encounter H_2S in a formation, you must demonstrate that the formation has been considered in your evaluation by recording zero (0) for the release rate information.

For the purpose of the H_2S evaluation, you must consider the formation encountered at total depth when completing the drilling case (i.e., evaluate the 15 m overhole formation).

Formation Code	Enter the formation code using Table 7.9 for each formation considered in your H_2S evaluation.
Formation Name	Enter the formation name using Table 7.9 for each formation considered in your H_2S evaluation.
Drilling Case	Enter the drilling case H_2S release rate in cubic metres per second (m^3/s) to 4 decimal places for each formation considered in your H_2S evaluation. Include formation encountered at total depth when completing drilling case. Enter zero (0) if you determine there is no potential to encounter H_2S in the formation.
Completion/Servicing Case	Enter the completion/service case H_2S release rate in m^3/s to 4 decimal places for each formation considered in your H_2S evaluation. Enter zero (0) if you determine there is no potential to encounter H_2S in the formation or the formation is not targeted for completion.
Suspended/Producing Case	Enter the suspended/production case H_2S release rate in m^3/s to 4 decimal places for each formation you plan to produce that was considered in your H_2S evaluation. Enter zero (0) if you determine there is no potential to encounter H_2S in the formation.

Step 2: Cumulative H_2S Release Rate (RR)

Enter the maximum cumulative H_2S release rate values in the table provided.

Drilling Case	Enter the maximum drilling case cumulative H_2S release rate in m^3/s to 4 decimal places, as determined by your H_2S release rate assessment.
Completion/Servicing Case	Enter the maximum completion/servicing cumulative H_2S release rate in m^3/s to 4 decimal places, as determined by your H_2S release rate assessment for the completion/servicing formation(s).
Suspended/Producing Case	Enter the maximum suspended/producing H_2S release rate in m^3/s to 4 decimal places, as determined by your cumulative H_2S release rate assessment for the producing formation(s).
1. Intermediate casing to be set	YES means that intermediate casing will be set in the well. NO means that intermediate casing will not be set; therefore, the maximum cumulative H_2S release rate should reflect the total potential flow from the well.
2. Maximum H_2S concentration encountered in the well	Enter the maximum potential H_2S concentration that you anticipate to encounter in the well in parts per million (ppm), moles per kilomole (mol/kmol), or percentage (%).
3. Anticipated suspended/ producing level as per *ID 97-06*	Check the level classification, based on the anticipated producing level of the well, as outlined in *ID 97-06*. N/A means that in accordance with Table 7.5, the producing horizon suspended/producing H_2S release rate is less than 0.01 m^3/s.

Step 3: Calculated Emergency Planning Zone (EPZ)

Enter the maximum calculated EPZ for each release rate scenario (Section 7.10.2):

Drilling Case	Enter the maximum calculated EPZ for the drilling case in km rounded to the nearest 0.01 km.
Completion/Servicing Case	Enter the maximum calculated EPZ for the completion/servicing case in km rounded to the nearest 0.01 km.
Suspended/Producing Case	Enter the maximum calculated EPZ for the suspended/producing case in km rounded to the nearest 0.01 km.

Enter the number of occupied dwellings, public facilities, and/or places of business inside the calculated EPZ for each release rate scenario:

Drilling Case	Enter the number of occupied dwellings, public facilities, and/or places of business inside the calculated EPZ for the drilling case.
Completion/Servicing Case	Enter the number of occupied dwellings, public facilities, and/or places of business inside the calculated EPZ for the completion/servicing case.

Suspended/Producing Case	Enter the number of occupied dwellings, public facilities, and/or places of business inside the calculated EPZ for the suspended/producing case.
1. Distance to nearest surface development	Enter the distance, in km to 2 decimal places, to the nearest surface development. If the nearest surface development is owned by the applicant (e.g., rig camp), enter that distance. If that company-owned site is the only surface development within the EPZ, contact the EPA group regarding ERP requirements.
2. Distance to nearest urban centre	Enter the distance, in km to 2 decimal places, to the nearest urban centre.
3. A site-specific ERP is required.	YES means that a site-specific emergency response plan (ERP) is required. NO means that a site-specific ERP is not required.
3a. If YES, the ERP has been submitted to the Emergency Planning and Assessment Section.	YES means that a site-specific ERP is required and has been submitted to the Emergency Planning and Assessment Section NO means that a site-specific ERP is required but has not been submitted to the Emergency Planning and Assessment Section.

Step 4: Critical Well Only

1. All equipment and practices for the drilling of this well will meet or exceed the requirements of *ID 97-06, Directive 036,* and IRP Volume 1.	YES means that for Category E wells all equipment and practices for the drilling of the well will meet or exceed the requirements of *ID 97-06, Directive 036*, and the current IRP Volume 1. NO means that all equipment and practices for the drilling of this well will not meet or exceed the requirements of *ID 97-06, Directive 036,* and the current IRP Volume 1. If NO, you must attach a copy of the waiver approval issued by the ERCB Operations group, a statement that a waiver application has been made and approval is pending, or the waiver request to your application. The ERCB will review the circumstances and decide if an exemption is warranted.

Section 8 Additional Application Requirements (Special Circumstances)

8.1 Overview

This section sets out application-related requirements that address specific locations or circumstances. It is included to avoid creating multiple directives on specific matters that primarily relate to the *Directive 056* energy development applications process.

8.2 Battle Lake Area Application Requirements

8.2.1 Background

Battle Lake is a unique environment in that it remains essentially a wilderness lake convenient to major population centres (one hour from Edmonton and Red Deer and two and a half hours from Calgary). In 1974, the County of Wetaskiwin commissioned a study about Battle Lake and gave the lake a protected status, with overwhelming support from area residents. That status was later modified into the county's general plan and a watershed protection district was formed. The provincial government also recognized the merit of protecting the area by creating the Mount Butte and South Battle Lake Natural areas, which now protect about one-third of the shoreline and riparian zones, as well as some of the upland habitat.

Subsequent to *Decision 2005-129: Review of Well Licence No. 0313083 and Application for Associated Battery and Pipeline, Pembina Field*, the ERCB engaged Battle Lake area stakeholders in a pilot project to address upstream oil and gas development issues. After a detailed review, the area stakeholders recommended and the ERCB concurred that further disturbance by oil and gas development in close proximity to Battle Lake and surface water features in the contributing watershed (designated as the Tier 1 area) should be avoided where practical. In particular, lands within the Tier 1 area are closely linked to Battle Lake. Should spills or leaks occur, contaminants would quickly enter Battle Lake, giving limited opportunity to implement effective emergency measures. The Tier 1 areas include bald eagle nesting sites, fish spawning grounds, and unique vegetation communities (fern meadows), as well as natural upland wildlife habitat areas. Battle Lake community residents hold very strong views that further development within Tier 1 areas is not acceptable.

As a result, the ERCB has determined that licence applications for oil and gas facilities located in the designated Tier 1 area will be considered through the *Directive 056* nonroutine application licensing process. The designated Tier 1 area as of May 1, 2007, includes Townships 45 and 46, Ranges 2 and 3, West of the 5th Meridian, and is illustrated in Figure 8.1. Note that the current mapping of the area may not have identified and designated all water features, notably springs in the area. It is intended that water features in the watershed be protected. Therefore, assessment of potential development sites is needed to verify whether unmapped water features are present. If unmapped water features are identified, these areas are to be protected consistent with Tier 1 practices.

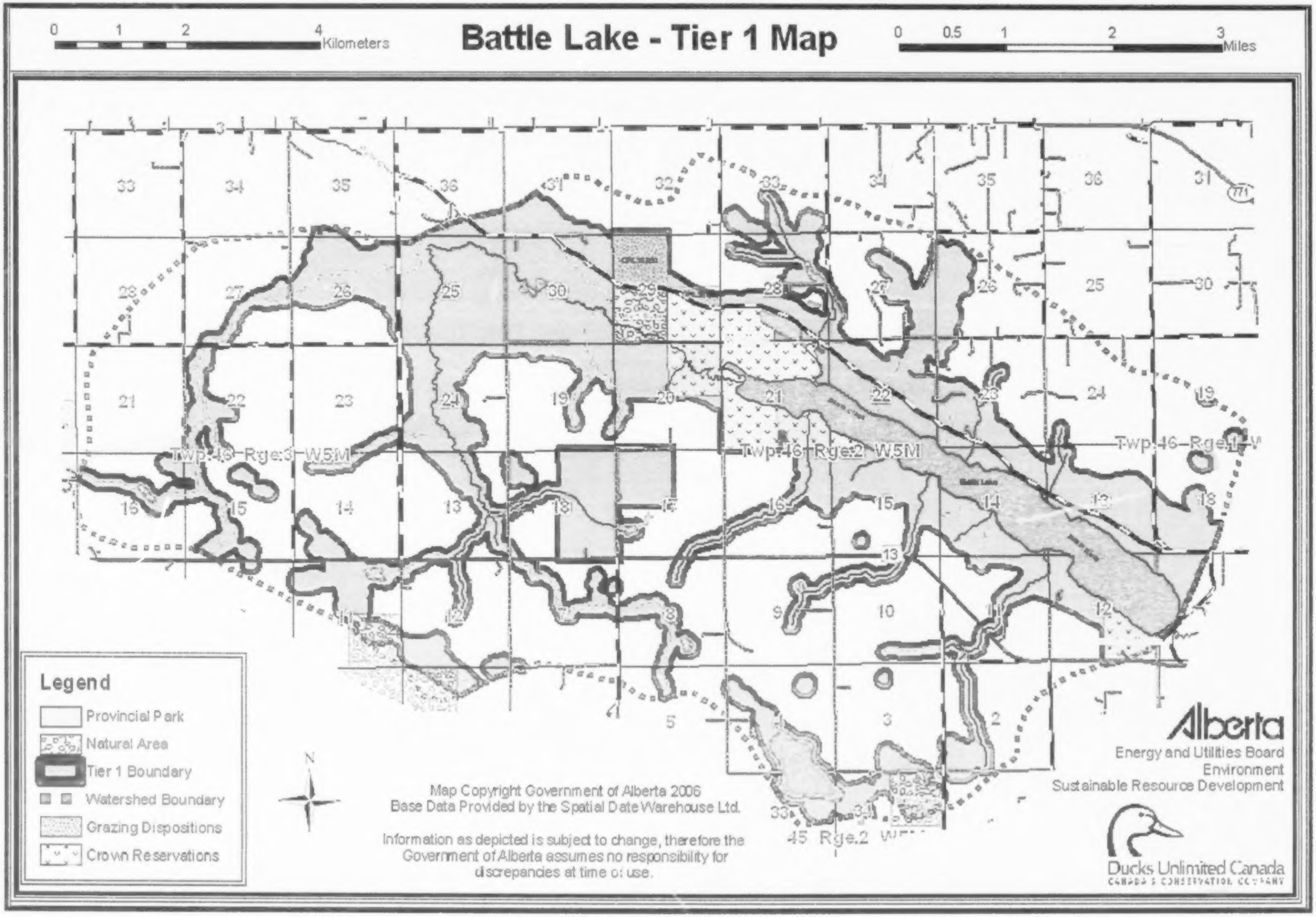

Battle Lake - Tier 1 Map
0 1 2 4 Kilometers
0 0.5 1 2 3 Miles
Twp.46 Rge.3 W5M
Twp.46 Rge.2 W5M
Twp.46 Rge.1 W
45 Rge.2 W
Battle Lake
771
Legend
Provincial Park
Natural Area
Tier 1 Boundary
Watershed Boundary
Grazing Dispositions
Crown Reservations
N
Map Copyright Government of Alberta 2006
Base Data Provided by the Spatial Date Warehouse Ltd.
Information as depicted is subject to change, therefore the Government of Alberta assumes no responsibility for discrepancies at time of use.
Alberta
Energy and Utilities Board
Environment
Sustainable Resource Development
Ducks Unlimited Canada
CANADA'S CONSERVATION COMPANY

Figure 8.1. Battle Lake Tier 1 Nonroutine Application Area

8.2.2 Battle Lake Tier 1 Area Definition

The Tier 1 area is defined as surface lands within

- 100 m of water features that feed into Battle Lake (water features for the purpose of this criterion include permanent and recurring streams, springs, and wetlands [fens, bogs, muskeg, marshes]; these include water bodies and wetlands as defined by the more stringent or comprehensive designations in the *Water Act* and the draft Alberta Wetlands Policy);
- 100 m of the 900 m (2950 foot) elevation contour along the shoreline of Battle Lake (top of the escarpments that parallel the lake); and
- the Mount Butte natural area, County natural areas, South Battle Lake Natural Area, and remaining undisturbed natural areas on public lands.

8.2.3 Tier 1 Area Application Requirements

Proposed development within the Tier 1 area is subject to the following requirements:

1) Proponents must investigate alternative approaches for oil and gas development and, where feasible, are expected to select those that avoid further disturbance of Tier 1 areas.

2) If development within Tier 1 area is viewed as unavoidable, proponents must
    a) assess opportunities to use existing facilities, road access, pipeline rights-of-way, and other pre-existing disturbances and to minimize incremental disturbances in Tier 1 areas,
    b) ensure that well, production battery, compressor, and gas plant sites located in Tier 1 have appropriate mitigative measures to prevent fluid spills and contaminated runoff from entering wetlands, streams, or the lake during construction and operational phases (e.g., runoff containment berms and retention ponds, catch-pans or devices for equipment seal leaks), and
    c) incorporate mitigative measures to maintain the integrity of pipelines and provide for early detection of and response to leaks for new hydrocarbon liquid and produced water pipelines traversing Tier 1 lands.

3) Proponents must conduct a preapplication on-site assessment to determine site and pipeline/road locations that will
    a) avoid sensitive habitats that may include bald eagle nesting sites, fern meadow sites, and other unique ecological features that may be identified,
    b) identify and avoid steep slopes where construction could require significant surface disturbance or aggravate erosion problems, and
    c) avoid disturbance of springs, streams, and wetlands.

    A primary purpose of the site assessment is to verify whether unmapped water features are present. If unmapped water features are identified, these areas are to be protected.

The ERCB encourages applicants to

- participate in the Battle Lake Watershed Synergy Group,
- review their plans and explain their rationale for their proposed development in Tier 1 areas at a regular meeting of the synergy group, and
- consult with the Battle Lake Preservation Society and seek its advice on locations and mitigative measures for new development in Tier 1 areas.

4) In addition to the required nonroutine documentation, all *Directive 056* applications for development in the Tier 1 area must be accompanied with justification that includes the following information:

   a) a cover letter that identifies that the proposed development is within the Battle Lake Tier 1 area;

   b) an explanation of the alternatives involving development outside Tier 1 areas that have been investigated and an explanation of why these are not technically feasible; the alternatives are to be compared with the application case in terms of potential land disturbance and other watershed effects, impacts on the public, resource recovery, and feasibility;

   c) a description of the proposed site that describes existing cover, habitat features, and presence of surface water features (springs, streams, and wetlands);

   d) an explanation of how existing facilities and disturbances have been incorporated into the project;

   e) an explanation of mitigation measures the proponent will undertake to prevent contamination of surface water bodies from leaks and spills; and

   f) a description of any feedback on the proposed development as a result of discussions with the Battle Lake Watershed Synergy Group and/or the Battle Lake Preservation Society.

The ERCB expects that any new disturbance will be limited to the minimum area feasible and that cleanup, regrading, and establishment of natural cover similar to predisturbance conditions on unused portions of rights-of-way and lease sites will occur as soon as possible following construction.

8.2.4 Non-Tier 1 Areas

The Battle Lake pilot project also addressed facility application considerations for other parts of the watershed, including the adoption of recommended practices for areas not designated as Tier 1. Proposed surface facility development within Battle Lake Tier 2 (undisturbed and forested lands) and Tier 3 (lands disturbed by agricultural, residential, or other industrial development) areas may continue to be filed in the routine application stream, provided that the application meets all *Directive 056* requirements for such applications.

8.3 Sour Gas Planning and Proliferation Application Requirements

Effective June 30, 2008, all applicants are required to follow the *Recommended Practices for Sour Gas Development Planning and Proliferation Assessment (May 2004)*[*] (*Recommended Practices*) when proposing sour gas development (i.e., facilities, pipelines, and wells) in areas where residents are located within the emergency planning zone (EPZ).

8.3.1 Background

In December 2000, the Provincial Advisory Committee on Public Safety and Sour Gas produced a final report that contained 87 recommendations for addressing public safety and sour gas. In Recommendations 7, 32, and 33, the committee noted that a greater effort was required to reduce the proliferation of sour facilities near people and that more information regarding future development plans should be provided to people near sour gas developments as part of the ERCB's application and licensing process. In response to these recommendations, an Oversight Committee consisting of public, industry, and regulatory participants monitored sour gas development applications over a two-year trial period to determine if the *Recommended Practices* would be effective in responding to Recommendations 7, 32, and 33.

In its *Final Report—Outcomes and Recommendations from the Oversight Committee to the ERCB*, the Oversight Committee noted that when the *Recommended Practices* were followed, the effect was consistent with the intent of Recommendations 7, 32, and 33 and that the *Recommended Practices* were an effective approach to developing and maintaining good relations with the public.

However, because industry participation during the two-year trial was less than expected, the Oversight Committee subsequently recommended that a requirement to follow the *Recommended Practices* was necessary to meet Recommendations 7, 32, and 33.

8.3.2 Application Requirements for Sour Gas Development

Applicants must meet the following additional application requirements when preparing applications for sour gas development near people.

5) Prior to the submission of an application, the applicant must follow the *Recommended Practices* when planning sour gas development in areas where there will be residents located within the calculated EPZ. As a minimum, the applicant must
    a) conduct an assessment of any existing facility or pipeline to determine if it can be used;

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[*] The *Recommended Practices* were released under the auspices of the Canadian Association of Petroleum Producers (CAPP), the Canadian Association of Petroleum Landmen (CAPL), and the Small Explorers and Producers Association of Canada (SEPAC).

b) expand the project-specific information package requirements of Section 2.2.2 to include
  - a detailed description of the full project, including future wells, pipelines, and facilities,
  - the results of the applicant's assessment for the use of existing infrastructure,
  - a map that illustrates the assessment area, including proposed wells, pipelines, and/or facilities, existing land use (e.g., roads, residences), and existing infrastructure investigated, and
  - the anticipated timing for the project from the licensing stage through to production operations; and

c) meet all participant involvement requirements set out in Section 2, ensuring the program includes the radius recommended by Tables 5.1, 6.1, and 7.1.

6) An applicant that is required to conduct an assessment of the existing infrastructure must

a) review all existing sour gas facilities and sour gas pipelines within a 15 km radius of the proposed facility;

b) evaluate the feasibility of upgrading an existing facility and of forging commercial partnerships with existing licensees (for example, contact area operators for information required to conduct the assessment: operating pressure, available capacity, H_2S limitations, future production potential for the area); and

c) document the evaluation for application and audit purposes.

8.3.3 Addressing Concerns/Objections

If concerns or objections have been expressed and a nonroutine-participant involvement application will be submitted, the applicant is subject to the following additional requirements specific to sour gas planning and development.

7) If there are residents located in the calculated EPZ and unresolved concerns or objections exist, the applicant must

a) submit a nonroutine-participant involvement application that includes documentation to demonstrate that the requirements of Section 8.3.2 were met; and

b) consider preparing an Area Development Plan, as set out in the *Recommended Practices.*

i) If an Area Development Plan has been developed, the applicant must distribute a copy to all landowners, residents, and local authorities in the consultation/notification radius indicated in Tables 5.1, 6.1, and 7.1, and have the information available upon request from other interested parties.

In some circumstances the ERCB may request that an Area Development Plan be prepared in accordance with the *Recommended Practices* for distribution prior to submitting or during the processing of the application.

8) An applicant proposing sour gas development where there are residents located in the EPZ and about which unresolved concerns or objections exist may be required to

submit all applications associated with the proposed sour gas project (i.e., wells, facilities, and/or pipelines) at the ERCB's request.

8.3.4 Routine Submission

If there are no unresolved concerns or objections, the applicant may file a routine application with a cover letter indicating that no concerns or objections exist and that the application meets the requirements of the *Recommended Practices*. Applicants of routine submissions are not required to attach the documentation that demonstrates they met *Recommended Practices* with their routine application, but must retain the documentation for audit review purposes.

8.3.5 Audit and Enforcement

The audit review process will ensure that the sour gas development requirements summarized in Section 8.3.2 were fulfilled prior to the submission of the application. The ERCB will review nonroutine-participant involvement applications for compliance during the processing of the application. Nonroutine-technical and routine submissions will be subject to the existing audit selection and review processes. Prior to **January 1, 2009,** applications will be audited for compliance and feedback will be provided. For any applications that are determined to be noncompliant after that date, enforcement action will be initiated in accordance with *Directive 019: ERCB Compliance Assurance—Enforcement*.

Appendix 1 Summary of Revisions

The table below provides a summary of the key revisions in the June 2008 edition of *Directive 056*.

Section	Revisions
General Comments	This update adds requirements to Section 8, as well as reorganizing the pagination of the directive to be section based. In addition, the document now refers to the Energy Resources Conservation Board (ERCB) throughout.
Section 2: Participant Involvement	- Removed reference to "minimum" when describing consultation and notification requirements throughout section - Revised description of inclusion of persons outside of radius (Section 2.2.1, paragraph 4) - Revised EnerFAQs numbering - Added comments regarding Personal Information (Section 2.2.3) - Added reference to ADR (Section 2.3.3)
Schedule 1: Applicant General Information	- Added Alternate Reference for glycol dehydrators (Section 3.11 Applicant's Reference) - Added pipeline right-of-way plan (Step 3 Completeness Check)
Section 4: Applications Audit Process	- Table 4.1 revised to remove Low Risk Enforcement action for Failure to acquire a mineral lease continuation (DOE agreement obtained, documents pending)
Section 5: Facility Licence Applications	- Removed reference to "minimum" when describing consultation and notification requirements - Revised EnerFAQs numbering - Clarified project submissions information (Section 5.2) - Added courtesy notification for facility construction (Section 5.3) - Revised on-site power generation to direct applicants to Alberta Utilities Commission (Section 5.5.2.1) - Added new requirement for sour gas planning and proliferation (Section 5.8) - Added new alternate reference for glycol dehydrators for *Directive 039* (Section 5.9.7) - Clarified the requirement to notify ERCB Field Centre for temporary compressors (Section 5.9.8) - Clarified spacing for flare stacks to surface improvement (Section 5.9.10) - Enhanced ERCB Environmental Requirements section regarding *IL 93-09* (Section 5.9.16) - Removed requirement to include phone number and address in Participant Involvement Summary (Section 5.10.2.3) - Removed the requirement to submit Open House information - Added Sour Gas Planning and Proliferation audit requirements (Section 5.10.2.7) - Clarified equipment spacing requirement (Section 5.10.6.1) - Revised reference from CSA to engineering and safety (Section 5.10.6.2) - Revised Table 5.6 to include only audit submission documents - Added Table 5.7 nonroutine submission requirements
Schedule 2: Facility Licence Applications	- Clarified nonroutine submission requirements to be consistent with Table 5.7 and incorporated sour gas planning and proliferation requirements (Section 5.14.1) - Clarified nonroutine submission requirements for water body spacing (Section 5.14.1, Step 6) - Revised Question 3 to engineering and safety (Section 5.14.1 Step 6) - Clarified Question 5 nonroutine requirements (Section 5.14.1 Step 6) - Clarified Question 6 nonroutine requirements (Section 5.14.1 Step 6) - Clarified how applicants are to answer question 10 (Section 5.14.1, Step 6) - Added ERCB Environmental Requirements question and nonroutine submission requirements (Section 5.14.1, Step 6)
Schedule 2.3: H_2S Information—Facilities	- Revised sulphur recovery efficiency description to include all D category plants that have subsurface injection (Section 5.14.4, Step 2)
Section 6: Pipeline Licence Applications	- Removed reference to "minimum" when describing consultation and notification requirements - Added comments regarding gas utilities pipelines jurisdiction change (Section 6.1)

	- Clarified project submissions information (Section 6.2) - Removed paragraph 9 (Section 6.4) - Revised Table 6.1 to include new partial pressure requirement of CSA Z662 - Revised EnerFAQs numbering - Added new requirement for sour gas planning and proliferation (Section 6.8) - Revised CSA reference for pipeline leak detection (Section 6.9.3) - Added reference to *Pipeline Regulation* (Section 6.9.5) - Clarified liner types appropriate for routine submission (Section 6.9.18) - Revised partial pressure description to match CSA Z662 (Section 6.9.19) - Removed Figure 6.1 - Clarified requirements for polyethylene pipe (Section 6.9.22) - Enhanced ERCB Environmental Requirements section regarding *IL 93-09* (Section 6.9.26) - Removed requirement to include phone number and address in Participant Involvement Summary (Section 6.10.2.3) - Removed the requirement to submit Open House information - Added Sour Gas Planning and Proliferation audit requirements (Section 6.10.2.7) - Revised audit requirements for leak detection (Section 6.10.7.5) - Revised Table 6.4 to include only audit submission documents - Added Table 6.5 nonroutine submission requirements
Schedule 3: Pipeline Licence Application	- Added Free-standing reinforced composite as a liner type to Step 6 - Revised Question 2 to address CSA partial pressure requirement (Step 7) - Added ERCB Environmental Requirements question (Step 11) - Clarified nonroutine submission requirements to be consistent with Table 6.5 and incorporated sour gas planning and proliferation requirements (Section 6.11.1, Step 2) - Clarified expectation for determining distance to nearest residence (Section 6.11.1, Step 2) - Clarified description of resumption (Section 6.11.1, Step 6) - Clarified ERCB action for pending C&R approval (Section 6.11.1, Step 11) - Added ERCB Environmental Requirements question and nonroutine submission requirements (Section 6.11.1, Step 11)
Section 7: Well Licence Applications	- Removed reference to "minimum" when describing consultation and notification requirements - Clarified project submissions information (Section 7.2) - Revised Paragraph 7 to include producing situation for category/type (Section 7.4) - Revised EnerFAQs numbering - Added new requirement for sour gas planning and proliferation (Section 7.9) - Added comments regarding submission of confidential portion of ERP with application (Section 7.10.2) - Updated references for determining Base of Groundwater Protection (Section 7.10.9) - Enhanced ERCB Environmental Requirements section regarding *IL 93-09* (Section 7.10.13) - Clarified requirement to include well prognosis for H_2S release rate assessment (Section 7.10.15) - Removed requirement to include phone number and address in Participant Involvement Summary (Section 7.11.2.2) - Removed the requirement to submit Open House information (Section 7.11.2.5) - Added Sour Gas Planning and Proliferation audit requirements (Section 7.11.2.6) - Removed reference to preapproved ERP radius (Section 7.11.3) - Clarified surface casing audit requirements (Section 7.11.7.2) - Revised Table 7.6 to include only audit submission documents - Added Table 7.7 to summarize all nonroutine submission requirements

Schedule 4: Well Licence Application	- Inserted Operational Disclosure questions from Schedule 4.3 - Clarified nonroutine submission requirements to be consistent with Table 7.7 and incorporated sour gas planning and proliferation requirements (Section 7.13.1, Step 2) - Clarified ERCB Environmental Requirements question and nonroutine submission requirements (Section 7.13.1, Step 11)
Schedule 4.3: Well H_2S Information	– Clarified requirement to identify rig camp as nearest surface development (Section 7.13.4, Step 3) – Removed operational disclosure questions
Section 8: Additional Application Requirements (Special Circumstances)	— Added Section 8.3 to incorporate additional requirement for filing applications where sour gas development are planned with residents located within an EPZ (Section 8.3).
Appendices	- Added definition of facility construction (Appendix 3) - Added definition of pipeline right-of-way plan (Appendix 3) - Removed requirement to include phone number and address on Participant Involvement summary and to ensure comments are acceptable with FOIP (Appendix 4) - Updated letter from the Chairman of the ERCB (Appendix 11) - Updated EnerFAQs numbering (Appendix 11)

Appendix 2 References and Contacts

General

ERCB Documents

Directive 001: Requirements for Site-Specific Liability Assessments in Support of the ERCB's Liability Management Programs
Directive 006: Licensee Liability Rating (LLR) Program and Licence Transfer Process
Directive 011: Licensee Liability Rating (LLR) Program Updated Industry Parameters and Liability Costs
Directive 019: ERCB Compliance Assurance—Enforcement
Directive 023: Guidelines Respecting an Application for a Commercial Crude Bitumen Recovery and Upgrading Project
Directive 038: Noise Control
Directive 055: Storage Requirements for the Upstream Petroleum Industry
Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry
Directive 059: Well Drilling and Completion Data Filing Requirements
Directive 065: Resources Applications for Conventional Oil and Gas Reservoirs
Directive 067: Applying for Approval to Hold ERCB Licences
Directive 071: Emergency Preparedness and Response for the Upstream Petroleum Industry
Interim Directive (ID) 81-03: Minimum Distance Requirements Separating New Sour Gas Facilities Residential and Other Developments
ID 96-01: Hay-Zama Lake Complex-Special Requirements
Informational Letter (IL) 88-05: Application for Approval of Natural-Gas-Driven Compressors
IL 93-09: Oil and Gas Developments, Eastern Slopes (Southern Portion)
IL 94-06: Discharge of Produced Liquids to Earthen Structures Notice of Intention to Amend Existing Regulations
IL 2002-02: Strength and Leak Pressure Testing of Pipelines Using Gaseous Test Media
Alberta Energy and Utilities Board Act http://www.ercb.ca/docs/requirements/actsregs/ercb_act.pdf
Energy Resources Conservation Act http://www.ercb.ca/docs/requirements/actsregs/erc_act.pdf
Oil and Gas Conservation Act http://www.ercb.ca/docs/requirements/actsregs/ogc_act.pdf
Oil and Gas Conservation Regulations http://www.ercb.ca/docs/requirements/actsregs/ogc_reg_151_71_ogcr.pdf
Oil Sands Conservation Act http://www.ercb.ca/docs/requirements/actsregs/osc_act.pdf
Oil Sands Conservation Regulation http://www.ercb.ca/docs/requirements/actsregs/osc_reg_076_88_oil_sands.pdf

Other Contacts and Documents

Alberta Boilers Safety Association http://www.absa.ca
Alberta Environment: http://www3.gov.ab.ca/env/protenf/landrec/documents/2002-2.pdf
Alberta Environment's Code of Practice for Compressor & Pumping Stations & Sweet Gas Processing Plants http://www.qp.gov.ab.ca/documents/codes/COMPRESS.CFM
Alberta Queens Printer http://www.qp.gov.ab.ca/custom_page.cfm?page_id=41
ASME (American Society of Mechanical Engineers) http://www.asme.org/codes/
Canadian Association of Petroleum Producers http://www.capp.ca/
Canadian Standards Association http://www.csa.ca/default.asp?language=English
Environmental Protection and Enhancement Act http://www3.gov.ab.ca/env/protenf/approvals/factsheets/enhanact.html
Environmental Protection and Enhancement Act - Approvals and Registrations Procedure Regulation - Applications for Sour Gas Processing Plants and Heavy Oil Processing Plants: A Guide to Content http://www.gov.ab.ca/env/protenf/publications/appsourgas.pdf
Guide for Effective Public Involvement http://www.capp.ca/default.asp?V_DOC_ID=763&PubID=24518
Indian Oil and Gas Canada (403) 292-5625 http://www.ainc-inac.gc.ca/oil/index_e.html
IRP (Industry Recommended Practice) http://www.enform.ca/859
Land Surveyors (Alberta) Act http://www.canlii.org/ab/sta/csa/20030217/r.s.a.2000c.l-3/whole.html
Land Titles (Alberta) Act http://www.canlii.org/ab/sta/csa/20030217/r.s.a.2000c.l-4/whole.html
Petroleum Registry of Alberta http://www.petroleumregistry.gov.ab.ca/
Public Lands Act http://www3.gov.ab.ca/srd/forests/fmd/directives/pla.html
Surface Rights (Alberta) Act http://www.canlii.org/ab/sta/csa/20030217/r.s.a.2000c.s-24/whole.html
Surveys Act (Alberta) http://www.canlii.org/ab/sta/csa/20030217/r.s.a.2000c.s-26/whole.html
Water Act http://www.qp.gov.ab.ca/Documents/acts/W03.CFM

Participant Involvement

ERCB Documents

Directive 029: Energy and Utility Development Applications and the Hearing Process
Guide 29 Brochure: Energy and Utility Development Applications, the Hearing Process, and Cost Awards
Directive 056: ERCB Public Information Package, including

- Letter from the Chairman of the ERCB
- ERCB brochure Understanding Oil and Gas Development in Alberta
- EnerFAQs No. 7: Proposed Oil and Gas Development—A Landowner's Guide
- IL 2001-01: Appropriate Dispute Resolution (ADR) Program and Guidelines for Energy Industry Disputes

Facilities

ERCB Documents

Directive 004: Determining Water Production at Gas Wells
Directive 007: Production Accounting Handbook
Directive 017: Measurement Requirements for Upstream Oil and Gas Operations
Directive 024: Large Facility Liability Management Program
Directive 028: Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations
Directive 039: Revised Program to Reduce Benzene Emissions from Glycol Dehydrators
Directive 042: Measurement, Accounting, and Reporting Plan (MARP) Requirement for Thermal Bitumen Schemes
Directive 046: Production Audit Handbook
Directive 048: Monthly Custom Treating Plant Statement
Directive 049: Gas Density Measurement Frequency
Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting
Directive 064: Requirements and Procedures for Facilities
ID 91-03: Heavy Oil/Oil Sands Operations and Clarification
ID 2001-03: Sulphur Recovery Guidelines for the Province of Alberta
ID 2001-05: Public Safety And Sour Gas Policy Implementation Recommendations 54, 60, and 61 Site-Specific Emergency Response Plans For Sour Operations, Emergency Planning Zones, and Reduced Planning Zones
IL 84-11: Approval, Monitoring, and Control of Sulphur Storage Sites
IL 85-10: Maximum Daily Rate of Production for Gas Wells
IL 90-03: Application for Special MRLs, GPP, and GOR Penalty Relief
IL 90-06: Measurement Guideline - Trucked Oil Production
IL 92-08: Crude Oil Pipeline Truck Terminal Measurement Guidelines
IL 92-09: Revised Reporting Procedures – Load Fluids
IL 93-01: Gas Density Measurement and Accounting Procedures for SE Alberta Sour Gas Wells
IL 93-10: Revised Measurement and Accounting Procedures for Southeastern Alberta Shallow Gas Wells.
IL 94-06: Discharge of Produced Liquids to Earthen Structures Notice of Intention to Amend Existing
IL 94-07: Coriolis Force Flowmeters
IL 94-20: Meter Proving Monitoring Program
IL 96-04: ERCB Policy Update and Clarification on the Use of Earthen Pits
IL 98-03: Minimum Standards for Flare Tanks

Other Documents

Alberta Ambient Air Quality Objectives http://www3.gov.ab.ca/env/air/OGS/objectives.html
Alberta Environment Air Quality Model Guidelines http://www3.gov.ab.ca/env/air.html

Pipelines

ERCB Documents

Directive 022: Use of Bimodal High-Density Polyethylene Pipe in Oil and Gas Service
Directive 026: Setback Requirements for Oil Effluent Pipelines
Directive 066: Requirements and Procedures for Pipelines
Guide 30: Guidelines for Safe Construction Near Pipelines
IL 2002-02: Strength & Leak Pressure Testing of Pipelines Using Gaseous Test Media
Pipeline Act http://www.ERCB.ca/docs/requirements/actsregs/pl_act.pdf
Pipeline Regulation http://www.ERCB.ca/docs/requirements/actsregs/pl_reg_091_2005.pdf

Other Contacts

National Association of Corrosion Engineers http://nace.org/nace/index.asp

Wells

ERCB Documents

Directive 008: Surface Casing Depth Minimum Requirements
Directive 009: Casing Cementing Minimum Requirements
Directive 010: Guide to Minimum Casing Design Requirements
Directive 035: Baseline Water Well Testing Requirement for Coalbed Methane Wells Completed Above the Base of Groundwater Protection
Directive 036: Drilling Blowout Prevention Requirements and Procedures
ID 94-02: Revisions to Oil & Gas Well Spacing Administration
ID 94-03: Underbalanced Drilling
IL 82-11: Preservation of Archaeological, Paleontological, and Historical Resources
IL 94-22: Operating Guidelines for Industrial Activity in Caribou Range, Northwest Alberta
IL 2001-05: Construction of a Well Site Prior to the Issuance of a Well License
IL 2002-01: Principles for Minimizing Surface Disturbance in Native Prairie and Parkland Areas
ST55: Alberta's Base of Groundwater Protection Information

Other Documents

CAPP document: H_2S Release Rate Assessment Guidelines and Audit Forms http://www.capp.ca/default.asp
Fisheries (Alberta) Act http://www.qp.gov.ab.ca/Documents/acts/F16.CFM
Historical Resources Act http://www.qp.gov.ab.ca/Documents/acts/H09.CFM
Listing of Significant Historical Sites and Areas, Protection and Stewardship Section: 780-431-2300
Navigable Waters Protection Act http://laws.justice.gc.ca/en/N-22/85822.html
Industry Recommended Practices http://www.psc.ca/

ERCB Contacts

Applications Branch
  Facilities Applications: 403-297-4369
  Resources Applications: 403-297-6957
Information Collection and Dissemination
  Production: 403-297-8952
  Well Data Services: 403-297-8696
  Information Services: 403-297-8190
Compliance and Operations Branch
  Corporate Compliance: 403-297-4485
  Air and Safety Compliance: 403-297-6952
Resources Branch
  Geology and Reserves: 403-297-8214

Field Centres

Bonnyville: 780-826-5352
Drayton Valley: 780-542-5182
Grande Prairie: 780-538-5138
High Level: 780-926-5399
Medicine Hat: 403-527-3385
Midnapore: 403-297-8303
Red Deer: 403-340-5454
St. Albert: 780-460-3800
Wainwright: 780-842-7570

Fort McMurray Office 780-742-2032

Other Contacts

Alberta Agriculture, Food and Rural Development: 780-427-2727; Utilities: 780-427-0125; http://www.agric.gov.ab.ca
Alberta Community Development: 1-800-232-7215; http://www.cd.gov.ab.ca
Alberta Environment: 780-944-0313; http://www3.gov.ab.ca/env
Alberta Infrastructure: 780-422-1202; http://www.infras.gov.ab.ca
Alberta Sustainable Resource Development: 780-944-0313; http://www3.gov.ab.ca/srd
Alberta Surface Rights Board: 780-427-2444; http://www.surfacerights.gov.ab.ca/srb/
Alberta Transportation: 780-427-2731; http://www.trans.gov.ab.ca
Alberta Utilities Commission: 403-592-8845; http://www.auc.ab.ca
Calgary and Edmonton Transportation Utility Corridor: http://tuc.gov.ab.ca
Department of Energy (formerly Department of Resource Development): 403-297-6324; http://www.energy.gov.ab.ca
NAV Canada: 1-800-876-4693; http://www.navcanada.ca
Surface Rights Board (SRB)/Land Compensation Board: 780-427-2444
Surface Rights Act on the Web: http://www.qp.gov.ab.ca/documents/acts/S24.CFM
Transport Canada: toll free 1 888 463 0521; http://www.tc.gc.ca/prairieandnorthern/menu.htm
The Farmer's Advocate: 780-427-2433; http://www1.agric.gov.ab.ca./$department/deptdocs.nsf/all/ofa2621
The Registrar of Land Agents: 780-415-4600; http://www3.gov.ab.ca/hre/lal/index.asp

ERCB Web Links

Integrated Application Registry (IAR)

http://www.ercb.ca/portal/server.pt/gateway/PTARGS_0_0_266_224_0_43/http%3B/extContent/publishedcontent/publish/ercb_home/industry_zone/applications/view_application___integrated_application_registry__iar__query/

Appropriate Dispute Resolution (ADR)

http://www.ercb.ca/portal/server.pt/gateway/PTARGS_0_0_272_230_0_43/http%3B/extContent/publishedcontent/publish/ercb_home/public_zone/ercb_process/appropriate_dispute_resolution__adr_/

Electronic Application Submission (EAS)

http://www.ercb.ca/portal/server.pt/gateway/PTARGS_0_0_266_224_0_43/http%3B/extContent/publishedcontent/publish/ercb_home/industry_zone/applications/submit_application___electronic_application_submission__eas_/

***Directive 056* Web page**

http://www.ercb.ca/portal/server.pt/gateway/PTARGS_0_0_270_233_0_43/http%3B/extContent/publishedcontent/publish/ercb_home/industry_zone/rules__regulations__requirements/directives/directive056.aspx

Appendix 3 Definitions for the Purposes of *Directive 056*

Abandoned well	A well that has been drilled, abandoned, cut, and capped at surface.
Abandonment	The permanent dismantlement of a well, pipeline, or facility in the manner prescribed by the regulations; includes any measures required to ensure that the well, pipeline, or facility is left in a permanently safe and secure condition.
Abandoned zone	A previously completed zone that has been officially abandoned with cement and/or packing device(s). The well may have other producing zones.
Abandoned and whipstocked	A well where the lower portion of the wellbore has been abandoned and a deviated and/or whipstocked wellbore (leg) is then drilled from the original wellbore. This results in wells with a common surface location, a common portion of wellbore, and two or more whipstock legs to different bottomhole locations.
Acid gas	Gas that is separated in the treating of solution or nonassociated gas that contains hydrogen sulphide (H_2S), totally reduced sulphur compounds, and/or carbon dioxide (CO_2).
Applicant/licensee	The company responsible for the accuracy and completeness of the application and all supporting information. Upon licence approval, the applicant becomes the licensee and bears responsibility for the construction and safe operation of the facility, pipeline, or well. The licensee is also responsible for the decommissioning, abandonment, and reclamation of the facility, pipeline, or well.
Battery	See Gas battery, Oil/bitumen battery.
Bitumen	Bitumen may be defined by specific gravity or API units or by the well's location within the designated oil sands areas.
Blending	The combination of similar products with different H_2S contents for the purpose of maintaining a lower H_2S content in the blended stream. Blending of liquids with gases is not permitted for pipelines.
Blowout	A well where there is an unintended flow of wellbore fluids (oil, gas, water, or other substance) at surface that cannot be controlled by existing wellhead and/or blowout prevention equipment, or a well that is flowing from one formation to another formation(s) (underground blowout) that cannot be controlled by increasing the fluid density. Control can only be regained by installing additional and/or replacing existing surface equipment to allow shut-in or to permit the circulation of control fluids, or by drilling a relief well.
Coalbed methane gas	Natural gas that is found in coal.
Coalbed methane well	Any well intended to produce or producing coalbed methane.
Compressor station/site	Service equipment intended to maintain or increase the flowing pressure of the gas that it receives from a well, battery, or gathering system prior to delivery to market or other disposition.
Condensate	A hydrocarbon liquid recovered either from a natural gas well or at some point in the field handling system consisting primarily of pentane and heavier hydrocarbons.

Construction (facilities)	Construction for a facility is deemed to occur when any equipment associated with a licence for the facility is brought to the site or when a ground disturbance required for the facility equipment is initiated.
Consultant	A person or corporation authorized by an applicant to prepare its application. The applicant is still responsible for the accuracy and completeness of the application if filed on its behalf by a consultant.
Container	Any portable aboveground containment device (e.g., drums, pails, bags, boxes, totes) that has a capacity less than 1 m^3.
Confirmation of nonobjection	A statement made by a person that confirms there is no objection to the ERCB granting a licence for the proposed energy development.
Critical sour well	The ERCB designation of a well for drilling purposes that identifies a well with an H_2S release rate of > 2.0 m^3/second or other wells with a lesser release rate in close proximity to an urban centre.
Crown disposition	The administrative and operating conditions assigned for use of public lands in the form of a lease, licence, permit, or letter of authority; administered by Sustainable Resource Development (SRD).
Crown disposition holder	A person or party that has been assigned use of public lands (e.g., lease, licence, or permit) issued under the provisions of the *Public Lands Act.*
Custom treating plant	A system or arrangement of tanks and other surface equipment receiving oil/water emulsion exclusively by truck for separation prior to delivery to market or other disposition.
Dehydrator	Equipment designed to remove water from raw gas.
Design capacity	The maximum capable throughput of volumes based on the engineering design of all on-site equipment associated with the facility.
Development	Any proposed project, operation, or activity likely to have an impact on existing resources, the environment, and the public.
Directionally drilled well	A well drilled on an angle from a surface location to a subsurface location some lateral distance away from the surface location of the well.
Drilled and cased	A well that has been drilled and cased but not immediately put on production.
Drilling spacing unit	The drilling spacing unit for a well is a) the surface area of the drilling spacing unit and the subsurface vertically beneath that area, or b) where the drilling spacing unit is prescribed with respect to a specified pool, geological formation, member or zone, the pool, geological formation, member, or zone vertically beneath that area. The normal drilling spacing unit for an oil well is one quarter section. The normal drilling spacing unit for a gas well is one section. A drilling spacing unit does not include the area of a road allowance.
Emergency planning zone (EPZ)	An area surrounding a facility, pipeline, or well where residents or other members of the public may be at highest risk during the early stages of an incident such as an uncontrolled release of toxic materials (e.g., H_2S), an explosion, or a fire and the area for which the operator must have a specific emergency response plan.

Emergency response plan (ERP)	A comprehensive plan to protect the public, including criteria for assessing an emergency situation and procedures for mobilizing response personnel and agencies and establishing communications and coordination. The ERP is to be followed by all parties in the event of an incident.
Emulsion	A combination of two immiscible liquids or liquids that do not mix together under normal conditions.
Expectations	Recommended best practices or guidelines. Enforcement is not assigned to expectations, but they should be given serious consideration.
Environment	All components of the earth, including air, land, and water; all layers of the atmosphere; all organic and inorganic matter and living organisms; and interacting natural systems.
Event sequence code (ES)	A character code indicating the chronological sequence of a significant drilling and/or completion operation of a wellbore that yields a separate and unique set of geological or production data.
Facility	Any building, structure, installation, equipment, or appurtenance over which the ERCB has jurisdiction and that is connected to or associated with the recovery, development, production, handling, processing, treatment, or disposal of hydrocarbon-based resources or any associated substances or wastes. This does not include wells or pipelines.
Fire	Any unprotected flame or source of ignition.
Flame-type equipment	Any electric or fired heating equipment using an open flame, electric arc, or element; includes a space heater, torch, heated process vessel, boiler, electric arc, open flame welder, and open element electric heater or appliance.
Gas battery	A system or arrangement of tanks and other surface equipment (including interconnecting piping) that receives the effluent from one or more wells that might provide measurement and separation, compression, dehydration, dew point control, H_2S scavenger where < 0.1 t/d of sulphur is being treated, line heater or other gas handling functions prior to the delivery to market or other disposition. This does not include gas processing equipment that recovers more than 2 m^3/d of liquids or processes more than 0.1 t/d of sulphur.
Gas fractionating plant	An arrangement of equipment to reprocess a natural gas liquid (NGL) inlet for the extraction of liquids.
Gas processing	The changing of the composition of raw natural gas either at processing facilities at the gas field or at straddle plants located on pipeline systems.
Gas processing plant	A system or arrangement of equipment used for the extraction of hydrogen sulphide, helium, ethane, natural gas liquids, or other substances from raw gas; does not include a wellhead separator, treater, dehydrator, or production facility that recovers < 2 m^3/day of hydrocarbon liquids without using a liquid extraction process (e.g., refrigeration, desiccant). In addition, does not include an arrangement of equipment that removes small amounts of sulphur (< 0.1 tonne/day) through the use of nonregenerative scavenging chemicals that generate no hydrogen sulphide or sulphur dioxide.
Gas well	A well that produces primarily gas from a pool or portion of a pool wherein the hydrocarbon system is gaseous or exhibits a dew point reduction of pressure, or any well so designated by the ERCB.
Hand delivered	Delivering documents directly to a participant at their place of residence or place of business.

High vapour pressure hydrocarbon	Any hydrocarbon mixture with a Reid vapour pressure greater than 14 kPa.
High vapour pressure pipeline	A pipeline system containing hydrocarbons or hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure greater than 110 kPa absolute at 38°C. Some examples are liquid ethane, ethylene, propane, butanes, and pentanes plus.
Hydrogen sulphide (H_2S)	A naturally occurring gas found in a variety of geological formations and also formed by the natural decomposition of organic matter in the absence of oxygen. H_2S is colourless, heavier than air, and extremely toxic. In small concentrations it has a rotten egg smell and causes eye and throat irritation.
Injection/disposal facility	A system or arrangement of surface equipment associated with the injection or disposal of any substance through one or more wells for the purpose of water disposal or enhanced oil recovery (EOR).
Junked and abandoned	If a well has been drilled and abandoned due to drilling or mechanical problems at a total depth of 150 m or less, it is not considered to be a well. No information is required by the ERCB for such a drilling operation.
Landowner	The person in whose name a certificate of title has been issued pursuant to the *Land Titles Act*, or if no certificate of title has been issued, the Crown or other body administering the land. In the case of Métis land, the person registered in the Métis Settlements Land Registry as owner of the Métis title pursuant to the *Métis Settlements Land Registry Regulation*.
Large diameter/high pressure hydrocarbon pipeline	A hydrocarbon pipeline with both an outside diameter equal to or greater than 323.9 mm and a maximum operating pressure equal to or greater than 3475 kPa.
Licensee	The holder of a facility, pipeline, or well licence according to the records of the ERCB; includes a trustee or receiver-manager of property of a licensee (also see Applicant).
Line heater	Equipment installed at either the well site lease or along a pipeline right-of-way to prevent the formation of gas hydrates.
Liner	A tubular product that is inserted into buried pipelines to form a corrosion-resistant barrier or separate free-standing pressure-containing pipe.
Local authority	Council of a city, town, village, or municipal district, or in the case of an improvement district or special area, the Minister of Municipal Affairs, or the council of a settlement under the *Métis Settlements Act*.
Location exemption code (LE)	A code that identifies cases when there is more than one wellbore or facility on the smallest land area described by the Dominion Land Survey system.
Lost circulation	The loss of drilling fluids from the wellbore into permeable formations penetrated during drilling of the well.
Minimum information requirements	The project-specific details that an applicant must provide to all potentially directly and adversely affected parties in accordance with the participant involvement guidelines.
Multileg well	A well having more than one drilled hole or leg that can be created during the initial drilling of the well or during re-entry into an existing well and whipstocking. It also applies to horizontal drilling.
Multiwell facility	A battery (oil, gas, or bitumen) or satellite handling the production from multiple zones being produced in segregation from one wellbore; inlets for

	more than one well are located and being produced at a battery or satellite at one surface location; multiple single-well batteries or satellites are operated within one surface lease.
Nonobjection	The potentially directly and adversely affected party has been personally consulted or notified of the project, has fully understood the details, has no outstanding concerns or objections, and does not oppose the ERCB issuing a licence for the proposed energy development.
Nonroutine	An application is nonroutine if the applicant cannot meet requirements or chooses to apply for a regulatory relaxation; all participant involvement requirements have not been met; outstanding concerns/objections exist; the applicant proposes to implement new technology; the application is designated nonroutine (i.e., a new Category C or D plant, any Category E application, pipeline removal application).
Notification	The distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development.
Occupant	A person other than the owner who is in actual possession of land; a person who is shown on a certificate of title or by contracts as having an interest in the land; in the case of Métis land, a person having a right or interest in land recorded on the Métis title register pursuant to the *Métis Settlements Land Registry Regulation*; the holder of a permit for a coal mine; the owner of a private access road.
Oil/bitumen battery	A system or arrangement of tanks or other surface equipment or devices receiving the effluent of one or more wells for the purpose of separation and measurement prior to the delivery to market or other disposition.
Oil effluent	Oil, gas, and water in any combination produced from one or more oil wells or recombined oil well fluids that may have been separated in passing through surface facilities.
Oil and gas energy development	Any category type of facility, pipeline, and well requiring licensing under *Directive 056*.
Oil well	A well that produces primarily liquid hydrocarbons from a pool or a portion of a pool wherein the hydrocarbon system is liquid or exhibits a bubble point on reduction of pressure, or any well so designated by the ERCB.
Oil loading/unloading facility (truck terminal)	A system or arrangement of tanks and other surface equipment receiving crude oil by truck for the purpose of delivering crude oil into a pipeline.
Oil sands scheme approval number	The number assigned an approval of a scheme or operation for the recovery of oil sands or crude bitumen under the *Oil Sands Conservation Act*.
Oilfield waste	An unwanted substance or mixture of substances generated from the construction, operation, or reclamation of wells, facilities, and pipelines.
Operator	A person or company that has control of or undertakes the day-to-day operations and activities of a facility, pipeline, or well, whether or not that person is also the licensee for the facility, pipeline, or well.
Partial pressure	The pressure exerted by one component of a natural gas mixture when isolated in a container.
Participant	An organization, community, group, or individual with a stake in the discovery, development, and delivery of Alberta's resources.
Participant involvement	Participant involvement encompasses all aspects of public, industry, and regulator interactions and communications. It means that each organization,

	community, group, and individual with a stake in the discovery, development, and delivery of Alberta's resources may be a participant.
Perforation	The holes placed through the casing and cement into the formation using a perforation gun or by cutting the casing and cement using sand-laden fluids to expose a formation.
Personal consultation	Consultation through face-to-face visits or telephone conversations with identified parties and providing the required information packages.
Pipeline abandonment	The permanent deactivation of a pipeline, whether it is left in place or removed.
Pipeline base map	The plan produced by the ERCB on a township or smaller geographic area basis that shows pipelines currently licensed under the *Pipeline Act*.
Pipeline break	A rupture in any part of a pipeline.
Pipeline discontinuation	The temporary deactivation of a pipeline or part of a pipeline.
Pipeline installation	Any equipment, apparatus, mechanism, machinery, or instrument incidental to the operation of the pipeline. This includes compressor stations, pump stations, line heaters (Categories C and D), oil loading/unloading facilities, and tank farms associated with pipelines carrying process sales product.
Pipeline leak	The escape of substance from a pipeline.
Pipeline right-of-way plan	A scaled sketch plan of the pipeline right-of-way that includes ATS detail and identifies land ownership, water body crossing, and other directly adjacent or impacted rights-of-way.
Pipeline removal	The removal of an entire pipeline, including crossings of roads, railways, and watercourses.
Primary containment device	A device used to physically contain materials produced, generated, and used by the upstream petroleum industry. Primary containment devices include, but are not limited to, single-walled tanks and containers.
Processing equipment	Equipment used for the extraction of components such as water, H_2S, and liquids from gas or oil.
Process vessel	A heater, dehydrator, separator, treater, and any vessel used in the processing or treatment of produced gas or oil.
Project	A network of facilities, pipelines, and/or wells that connects to a common facility.
Public facility	A public building, such as a hospital, rural school, or a major recreational facility, situated outside of an urban centre.
Public notice	In accordance with the ERCB *Rules of Practice*, the delivery, circulation, or advertising by the ERCB of a notice stating that the ERCB might take an action in a proceeding as the notice may specify.
Publicly used facility	Places where the presence of people can be anticipated, e.g., places of business, campgrounds, cottages, churches, and other locations created for the use of the public.
Pump station	A system of equipment located at intervals along a main pipeline to maintain flow to the receipt point.
Re-entry operations	The re-entry of an abandoned wellbore by a company other than the original licence holder.

Refer status	A corporate status indicator activated on the Compliance and Operations Management System (COM) that indicates the licensee's inability or unwillingness to comply with the requirements. This status will be considered by the ERCB when deciding to approve or deny any pending or future applications to the ERCB involving the licensee.
Release	Any unintended discharge of upstream product (to the environment) that is released from its normal containment or transportation device, such as a well that can be controlled by existing wellhead and/or blowout prevention equipment, storage tank, pipeline, tank truck, etc. A release would also include any discharge (to the environment) of a refined product that has been injected into a well or pipeline. It should be considered a release if at a well, the flow of fluids (oil, gas, water or other substance) into the wellbore can be circulated out or bled off through the existing surface equipment.
Requirement	A rule that industry has an obligation to meet and against which the ERCB may take enforcement action in cases of noncompliance.
Residence	Full-time or part-time dwelling.
Resident	A person occupying a residence on a temporary or permanent basis.
Resumption of drilling operations	Re-entry of an existing wellbore by the licensee, whether abandoned or not, for the purpose of deepening, whipstocking, recompleting (abandoned well only), or horizontal recompletion.
Right-of-way	The land upon which a legal right-of-way is granted over another person's property. This right can be acquired by means of an easement or by a right-of-entry order.
Routine application	The applicant meets all requirements, including participant involvement, there are no outstanding public or industry concerns, and regulatory waivers or relaxations are not requested.
Satellite	An arrangement of surface equipment (not including oil storage tanks) located some distance between a number of wells and the main battery that will receive the effluent and that separates and measures the production from each well, after which the fluids are recombined and piped to the main battery for further treatment; may include water handling equipment.
Separation or setback distance	The minimum required distance between a well, pipeline, or other facility and land-use development, such as a surface improvement, permanent dwelling, unrestricted country development, urban centre, or public facility.
Solution gas	Gas that is dissolved in solution with produced oil or bitumen.
Sour gas level classification	A designation to stipulate different separation or setback distances for wells, pipelines, and facilities for land-use and public safety purposes, as described in *ID 81-03* and *ID 97-06*.
Special needs	Those persons for whom early actions must be taken for reasons such as requiring evacuation assistance, requesting early notification, not having telephones, requiring transportation assistance, or experiencing a language barrier.
Stock tank vapours	The small volume of dissolved gas present in storage tanks.
Straddle plant	Surface equipment intended to reprocess marketable gas for the purpose of ethane extraction.

Sulphur emissions	The release of sulphur-containing compounds, including SO_2, H_2S, and total reduced sulphur compounds.
Surface development	An occupied permanent or part-time dwelling, a publicly used facility, including a campground, place of business, and any other surface development where the public may gather on a regular basis.
Surface improvement	A railway, pipeline, canal or other right-of-way, road allowance, surveyed roadway, dwelling, industrial plant, aircraft runway or taxiway, buildings used for military purposes, permanent farm buildings, school, or church.
Suspension	The temporary cessation of operations at a well, pipeline, or facility in the manner prescribed by the regulations or directed by the ERCB; includes any measures required to ensure that the well, pipeline, or facility is left in a safe and secure condition.
Tank	A device designed to contain materials produced, generated, and used by the petroleum industry that is constructed of impervious materials.
Tank farm	A system or arrangement of tanks or other surface equipment associated with the operation of a pipeline and that may include measurement equipment and line heaters, but does not include separation equipment or storage vessels at a battery approved under the *Oil and Gas Conservation Act*.
Temporary facility or pipeline	A facility or pipeline that will be in use for a period of 12 months or less.
Terminating formation	For the purpose of well licensing, the deepest formation to which the applicant has the right to produce for all intended purposes of the well.
Unrestricted country development	Any collection of permanent dwellings situated outside of an urban centre and having more than eight permanent dwellings per quarter section; for the purpose of applying the requirements of *ID 97-6*, includes any similar development that the ERCB might so designate.
Unsatisfactory event	A contravention of a regulation or requirement.
Urban authority	The administrator of a city, town, new town, village, summer village, or hamlet with not fewer than 50 separate buildings, each of which must be an occupied dwelling, or other incorporated centre.
Urban centre	A city, town, new town, village, summer village, hamlet with not fewer than 50 separate buildings, each of which must be an occupied dwelling, or similar development the ERCB may designate as an urban centre.
Urban density development	Any incorporated urban centre, unincorporated rural subdivision, or group of subdivisions with not fewer than 50 separate buildings, each of which must be an occupied dwelling, or any other similar development the ERCB may designate.
Waste processing facility	A system or arrangement of tanks or other surface equipment receiving waste material for processing and disposition from any gas, oilfield, or oil sands operations.
Water body	Natural or manmade; contains or conveys water continuously, intermittently, or seasonally. A natural water body is any location where water flows or is present, whether the flow or the presence of water is continuous, seasonal, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, or other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills.

	Examples of a manmade water body include, but are not limited to, a canal, drainage ditch, reservoir, dugout, or other manmade surface feature.
Well spacing	The normal drilling spacing unit for a gas well is one section (1 well per 256 hectares); for an oil well it is one quarter section (4 wells per 256 hectares).
Working interest participant	A person who owns a beneficial or legal undivided interest in a well or facility under agreements that pertain to the ownership of that well or facility.
Workovers or well servicing	Work performed on a well after rig release for the purposes of completion, repair to downhole equipment, or any other operational activity where the well has not been abandoned and there are no changes required to the licence (e.g., total depth, target formation).

Appendix 4 Sample Participant Involvement Summary Form

for

(C350) Oil satellite @ 13-4-51-16W6M

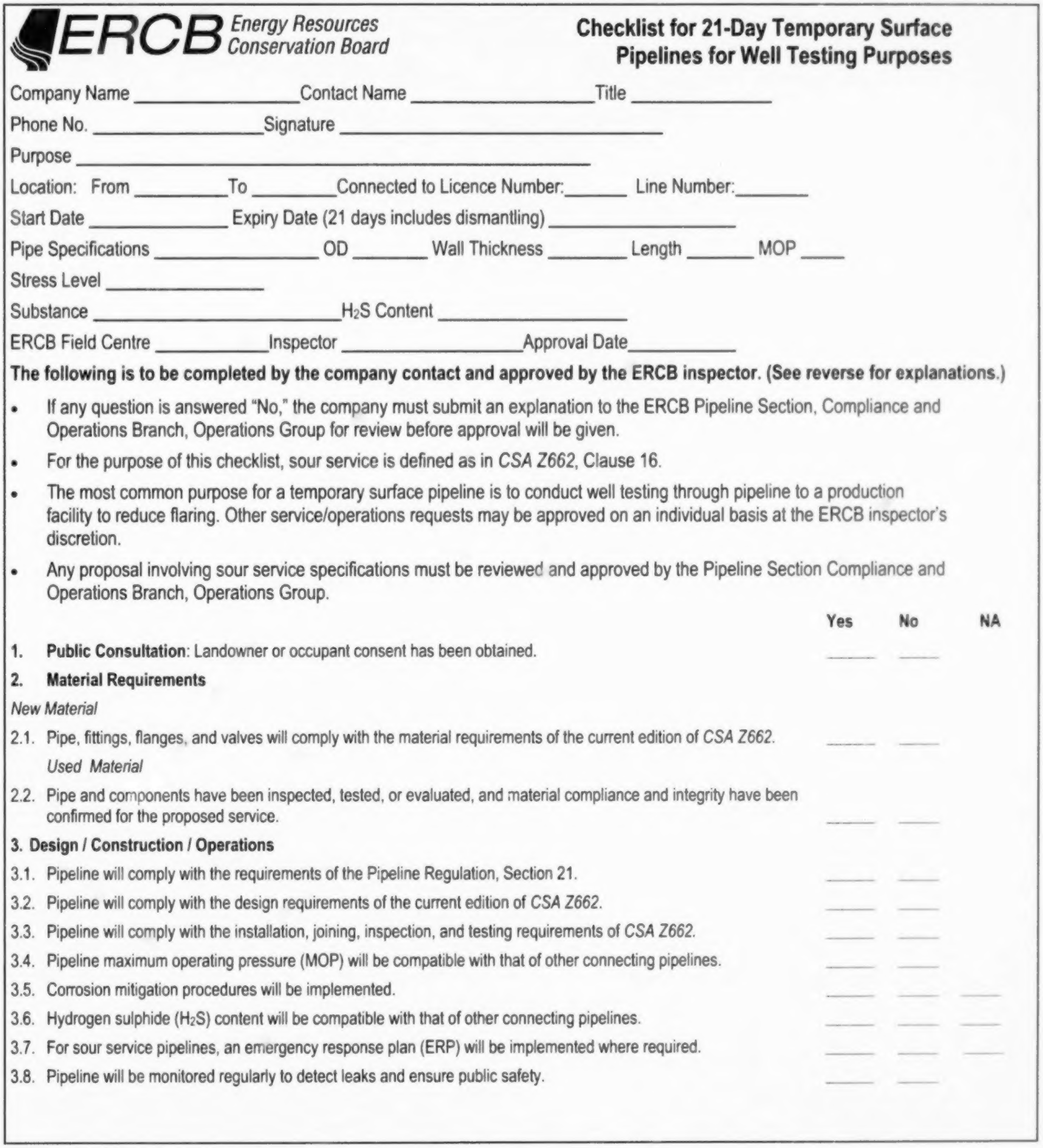
(Enter type of application here)

Land location (Qtr-Section-Township-Range-Meridian)	**Land interest** (e.g., landowner, occupant, resident, local authority)	**Name**	**Date of personal consultation**	**Date of confirmation of nonobjection**	**Consultation by phone or meeting**	**Notification by fax, registered or regular mail**	**Documents distributed and date of distribution**	**Date additional EnerFAQs distributed**	**Comments (see note)**
NW 1/4-4-51-16W6M	Landowner (SRD)	Crown Edmonton, AB	Jan. 1, 2005	Jan. 17, 2005 MSL #0000000	Meeting	Hand delivered	ERCB letter; project description Jan. 1, 2005	None requested	Declined copies of EnerFAQs #8 and ERCB brochure
NW 1/4-4-51-16W6M	Crown Disposition Holder TPA #0000	Trapper	Jan. 1, 2005		Phone	Regular mail	ERCB letter; project description; EnerFAQs #8; ERCB brochure	None requested	Wait a min. of 14 days prior to submitting application

Note: The comments contained in the participant involvement summary submitted to the ERCB with respect to an application must not contain any information gathered for purposes other than the submission of the application. The comments should assist ERCB staff to verify compliance with participant involvement requirements and to determine where unresolved issues exist. Inclusion of information such as an individual's health issues, opinions of others, and personal information gathered to assist in emergency evacuation should not be included, since this document may become part of the public record.

Appendix 5 Checklist for 21-Day Temporary Surface Pipelines for Well Testing Purposes

This checklist is reproduced here for information purposes only. Visit the *Directive 056 Web page* to download a copy of the checklist.



ERCB *Energy Resources Conservation Board*

Checklist for 21-Day Temporary Surface Pipelines for Well Testing Purposes

Company Name ________________ Contact Name ________________ Title ______________
Phone No. ________________ Signature ________________________________
Purpose ____
Location: From _________ To _________ Connected to Licence Number: ______ Line Number: _______
Start Date ______________ Expiry Date (21 days includes dismantling) __________________
Pipe Specifications ________________ OD _______ Wall Thickness ________ Length _______ MOP ____
Stress Level _______________
Substance ________________________ H_2S Content __________________
ERCB Field Centre ___________ Inspector __________________ Approval Date___________

The following is to be completed by the company contact and approved by the ERCB inspector. (See reverse for explanations.)

- If any question is answered "No," the company must submit an explanation to the ERCB Pipeline Section, Compliance and Operations Branch, Operations Group for review before approval will be given.
- For the purpose of this checklist, sour service is defined as in *CSA Z662*, Clause 16.
- The most common purpose for a temporary surface pipeline is to conduct well testing through pipeline to a production facility to reduce flaring. Other service/operations requests may be approved on an individual basis at the ERCB inspector's discretion.
- Any proposal involving sour service specifications must be reviewed and approved by the Pipeline Section Compliance and Operations Branch, Operations Group.

		Yes	No	NA
1.	**Public Consultation**: Landowner or occupant consent has been obtained.	____	____	
2.	**Material Requirements**			
	New Material			
2.1.	Pipe, fittings, flanges, and valves will comply with the material requirements of the current edition of *CSA Z662*.	____	____	
	Used Material			
2.2.	Pipe and components have been inspected, tested, or evaluated, and material compliance and integrity have been confirmed for the proposed service.	____	____	
3.	**Design / Construction / Operations**			
3.1.	Pipeline will comply with the requirements of the Pipeline Regulation, Section 21.	____	____	
3.2.	Pipeline will comply with the design requirements of the current edition of *CSA Z662*.	____	____	
3.3.	Pipeline will comply with the installation, joining, inspection, and testing requirements of *CSA Z662.*	____	____	
3.4.	Pipeline maximum operating pressure (MOP) will be compatible with that of other connecting pipelines.	____	____	
3.5.	Corrosion mitigation procedures will be implemented.	____	____	____
3.6.	Hydrogen sulphide (H_2S) content will be compatible with that of other connecting pipelines.	____	____	____
3.7.	For sour service pipelines, an emergency response plan (ERP) will be implemented where required.	____	____	____
3.8.	Pipeline will be monitored regularly to detect leaks and ensure public safety.	____	____	

Page 2 Checklist for 21-Day Temporary Surface Pipelines for Well Testing Purposes—User Notes

Temporary surface pipeline may only be used for maximum 21 days

1. Public Consultation

Yes means all of the applicable requirements as outlined in *Directive 056* have been met.

No means all of the above applicable requirements have not been met.

2. Material Requirements

New Material

2.1. Yes means that all of the applicable requirements as outlined in CSA Z662, Clause 5: Materials, have been met.

No means that all of the above applicable requirements have not been met.

Note:

- API, 5CT (J55 tubing) is allowed for nonsour service only.
- API, 5LCP (coiled pipe) is allowed for sweet service and may be used for sour service if the company demonstrates that the API, 5LCP coiled pipe used meets the requirements of CSA Z662, Clause 16 or a certificate of compliance is provided from the manufacturer or designer (P.Eng.) for the particular coiled pipe.
- The company must demonstrate that fittings, flanges, and valves intended for sour service meet the applicable CSA Z245 series and NACE MR0175. A certificate of compliance from the manufacturer or designer (P.Eng.) for the particular component is acceptable.

Used Material

2.2. Yes means that all of the applicable requirements as outlined in CSA Z662, Clause 5.7: Reuse of Materials, have been met.

No means that all of the above applicable requirements have not been met.

Note:

- Used J55 tubing is acceptable, provided that all of tubing has been fully inspected and meets API Recommended Practice 5C1, Clause 7.
- Used coiled pipe is acceptable, provided that the entire pipe has been fully inspected for damage and loss of wall thickness due to corrosion and that mechanical properties have not been affected from uncoiling and recoiling. Used coiled pipe must be fully inspected by visual inspection and either magnetic flux or eddy current method.

3. Design/Construction/Operation Requirements

3.1. Yes means that all of the applicable requirements as outlined in the Pipeline Regulation, Section 21, have been met.

No means that all of the above applicable requirements have not been met.

3.2. Yes means that all of the applicable requirements as outlined in CSA Z662, Clause 4: Design, have been met.

No means that all of the above requirements have not been met.

Note:

- The operator must ensure that the pipeline has adequate flexibility to withstand expansion or contraction movement due to changes in ambient or production temperatures.
- The operator must ensure that, where required, suitable restraints are in place to control excessive lateral and vertical movement. See the Pipeline Regulation, Section 21, and CSA Z662, Clause 4.6: Flexibility and Stress Analysis, for specific requirements.
- Threaded connections, mechanical interference fitting joints, and seal welding of threaded connections are not acceptable for sour service.
- Surface pipelines must be buried at all road and trail crossings.

3.3 Yes means that all of the applicable requirements as outlined in CSA Z662, Clauses 6: Installation, 7: Joining, and 8: Pressure Testing, have been met.

No means that all of the above applicable requirements have not been met.

Note:

- Welding of API, 5CT (J55 and others) is not acceptable.
- For sour service, welding of pipe grades greater than 386 MPa must be reviewed by the Pipeline Section.
- For sour service pipelines, all butt welds must be 100% inspected around their circumference. (See CSA Z662, Clause 16.6.8: Mandatory Nondestructive Inspection.)
- For sweet service pipelines, all butt welds within the limits of a water crossing, an uncased road or railway crossing, and all pressure-containing welds not subject to a pressure test in place must be nondestructively inspected. (See CSA Z662, Clause 7.10.3: Mandatory Nondestructive Inspection.)
- The pipeline must be hydrostatically pressure tested.
- A minimum of one hour-long pressure test is required for pipelines that are fully exposed. (See CSA Z662, Clause 8.10.)
- Pressure recorders including recording charts must be used to accurately record the pressures during the test. (CSA Z662, Clause 8.16.2.)

3.4. Yes means that the proposed pipeline MOP is the same as those of other connecting pipelines or that pressure control devices are in place to protect the pipelines from overpressure, as outlined in CSA Z662, Clause 4.18: Pressure Control and Overpressure Protection of Piping.

No means that the MOPs are not the same and that no pressure control devices are in place to protect the pipelines from overpressure.

3.5. Yes means that all of necessary steps have been taken to ensure that corrosion is controlled during the temporary operating period.

No means that corrosion control measures will not be in place during the temporary operating period.

N/A means that the corrosion control procedures are not required because the pipeline is noncorrodible.

3.6. Yes means that the proposed pipeline H_2S content is the same as the other connecting pipelines or that a control mechanism is in place to ensure that the proposed pipeline and other connecting pipelines are subject to the same H_2S content.

No means that H_2S content is not the same for all the pipelines and that no control mechanisms are in place to ensure that the pipelines are subject to the same H_2S content.

N/A means that the service fluid contains no H_2S.

Note: For sour service, prior to operation the company must consider removing any solids produced from the well that are trapped in the pipeline and batching the pipeline with inhibitor.

3.7. Yes means that an ERP has been established in accordance with Directive 071.

No means that no ERP has been established.

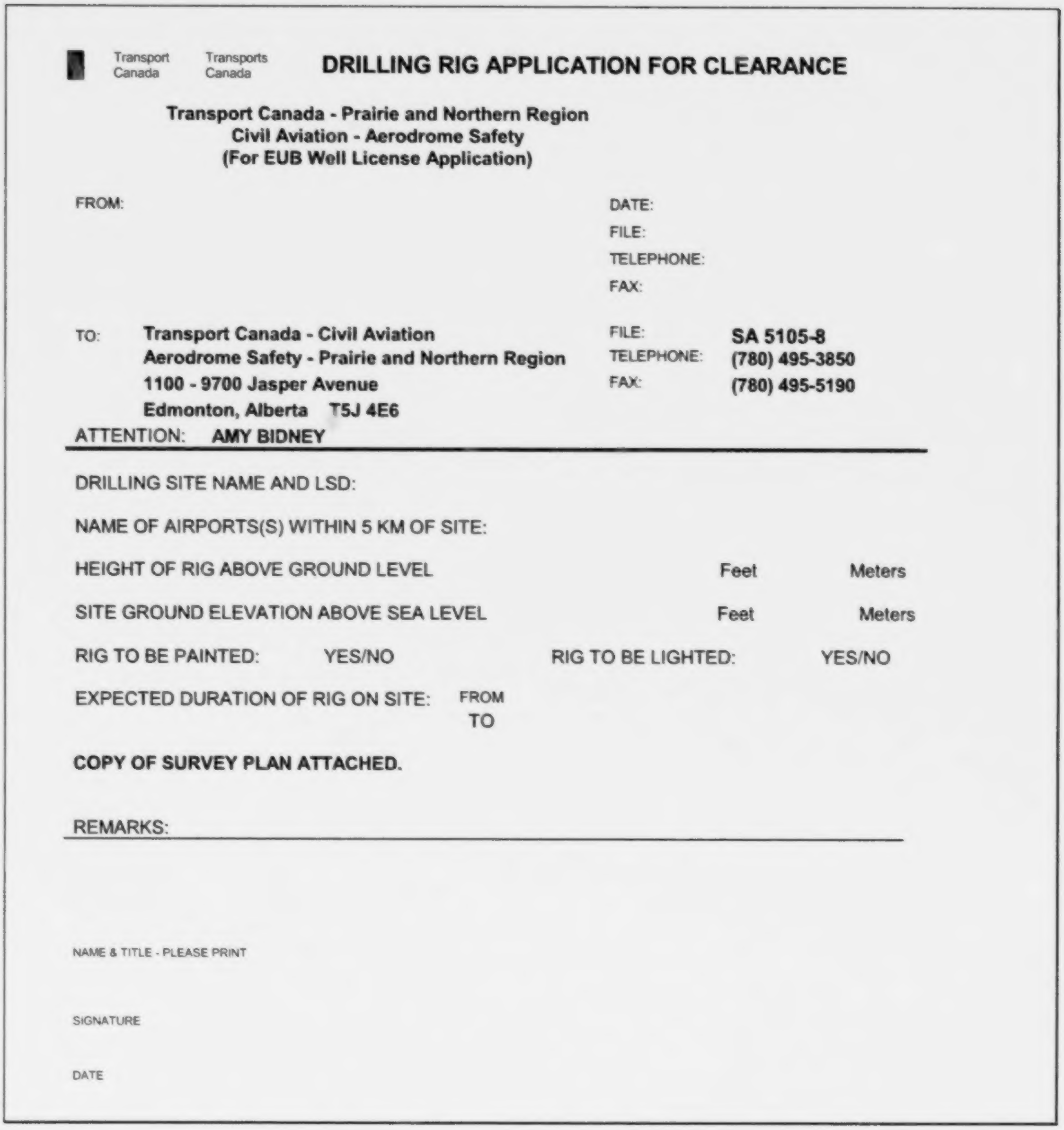
N/A means that the service fluid contains no H_2S.

3.8. Yes means all precautions have been taken to ensure the pipeline will be monitored for leaks regularly and will not be damaged by vandalism.

No means that the pipeline will not be monitored for leaks or vandalism.

Note: Depending on its location and substance, the operator might be required to monitor the pipeline 24 hours a day. (Pipeline Regulation, Section 21.)

Appendix 6 Rig Clearance Application Form



Transport Canada Transports Canada

DRILLING RIG APPLICATION FOR CLEARANCE

Transport Canada - Prairie and Northern Region
Civil Aviation - Aerodrome Safety
(For EUB Well License Application)

FROM:

DATE:
FILE:
TELEPHONE:
FAX:

TO: **Transport Canada - Civil Aviation**
Aerodrome Safety - Prairie and Northern Region
1100 - 9700 Jasper Avenue
Edmonton, Alberta T5J 4E6

FILE: **SA 5105-8**
TELEPHONE: **(780) 495-3850**
FAX: **(780) 495-5190**

ATTENTION: **AMY BIDNEY**

DRILLING SITE NAME AND LSD:

NAME OF AIRPORTS(S) WITHIN 5 KM OF SITE:

HEIGHT OF RIG ABOVE GROUND LEVEL Feet Meters

SITE GROUND ELEVATION ABOVE SEA LEVEL Feet Meters

RIG TO BE PAINTED: YES/NO RIG TO BE LIGHTED: YES/NO

EXPECTED DURATION OF RIG ON SITE: FROM
TO

COPY OF SURVEY PLAN ATTACHED.

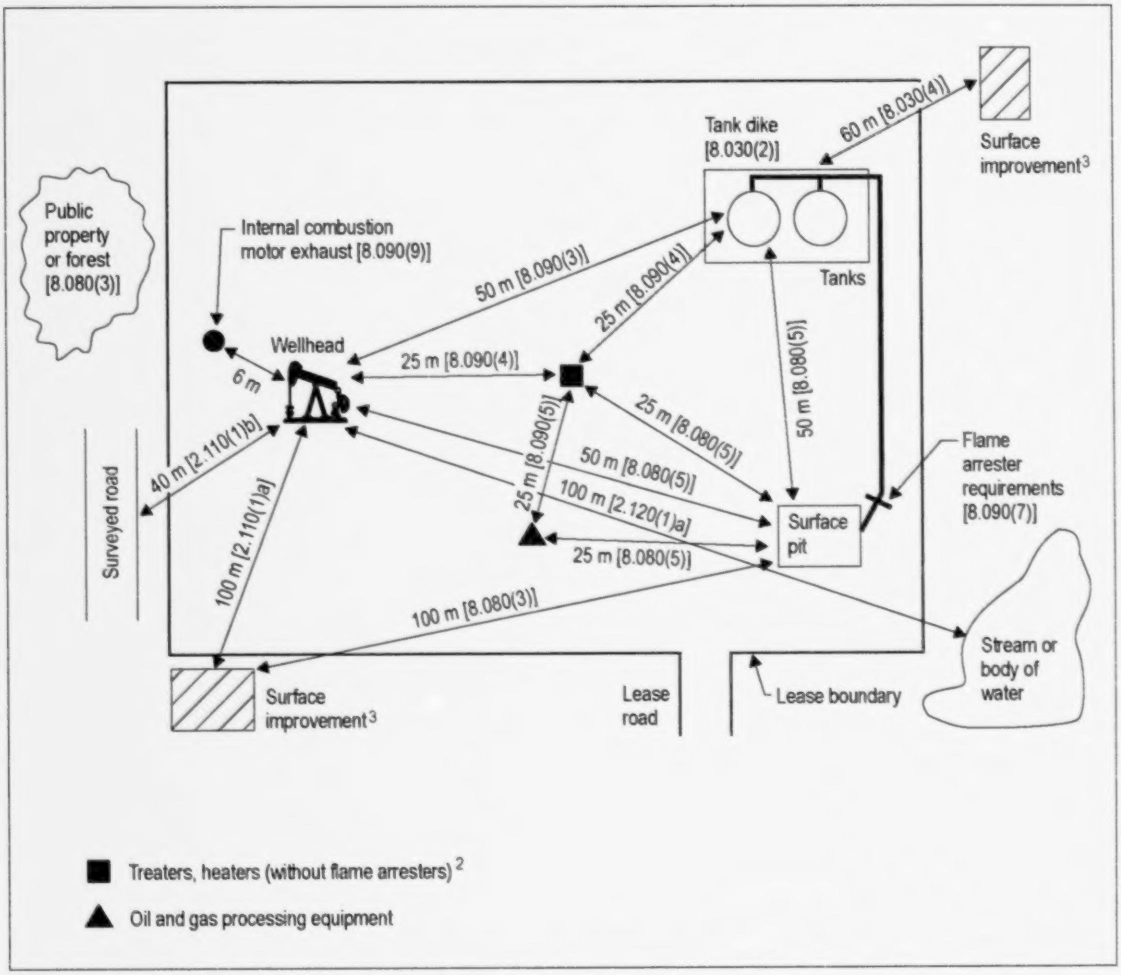
REMARKS:

NAME & TITLE - PLEASE PRINT

SIGNATURE

DATE

Appendix 7 Spacing Diagram


Public property or forest [8.080(3)]
Internal combustion motor exhaust [8.090(9)]
Tank dike [8.030(2)]
60 m [8.030(4)]
Surface improvement3
Tanks
50 m [8.090(3)]
25 m [8.090(4)]
Wellhead
6 m
25 m [8.090(4)]
50 m [8.080(5)]
25 m [8.080(5)]
Flame arrester requirements [8.090(7)]
Surveyed road
40 m [2.110(1)b]
100 m [2.110(1)a]
25 m [8.090(5)]
50 m [8.080(5)]
100 m [2.120(1)a]
Surface pit
25 m [8.080(5)]
100 m [8.080(3)]
Stream or body of water
Surface improvement3
Lease road
Lease boundary
■ Treaters, heaters (without flame arresters) 2
▲ Oil and gas processing equipment

[1] The spacing requirements illustrated here are as specified in the *Oil and Gas Conservation Regulations* sections indicated within square brackets alongside or underneath each measurement.
No person shall smoke within 25 m of a well, separator, oil storage tank or other unprotected source of ignitable vapour or on a rig or derrick at a well site Section 8.120(1)].

[2] No flame type equipment shall be placed or operated within 25 metres of any process vessels unless, where such is applicable, the flame type equipment is fitted with an adequate flame arrester [8.090(5)]. No flame type equipment shall be located in the same building as any process vessel or other source of ignitable vapour, unless a) the air intakes and flues of all burners are located outside the building, b) relief valves, safety heads, and other sources of ignitable vapours are vented outside the building and discharged above roof level, and c) the building is adequately cross ventilated [8.090(6)a,b,c].

[3] "Surface improvement" means a railway, pipeline or other right-of-way, road allowance, surveyed roadway, dwelling, industrial plant, aircraft runway or taxiway, building used for military purposes, permanent farm building, school or church [1.020(1)28].

Compressors (electrically or engine driven) that are permanent and housed in a building must be located 25 m from wells, oil storage tanks, or unprotected sources of ignitable vapours. Compressors that are nonpermanent (on wheels or skid mounted) must be placed such that the air intakes and exhaust must be no closer than 6 m from a well. Nonpermanent electrically driven compressors must comply with the current edition of *Code for Electrical Installations at Oil and Gas Facilities*, Safety Codes Council (Alberta).

Appendix 8 Generic H_2S Release Rate Assessment (Case Study)

The following example does not represent a specific location, but is presented to clarify the requirements.

Geological Discussion

Proposed Well

A well prognosis must be provided, but is omitted for the purposes of this generic example. The proposed exploratory well will be drilled to test a Leduc Formation anomaly in the Edmonton area. The well is located on a Paleozoic high with 10 metres (m) of structural relief relative to the surrounding wells. The applicant believes the well will have secondary Ellerslie member potential and expects both zones will contain oil.

As the proposed well will penetrate intervals deeper than the top of the Mannville Group and will terminate in the Leduc Formation, a comprehensive geological discussion of all intervals deeper than the top of the Mannville Group to the Leduc Formation is required (Section 7.10.15.1). In this example, a discussion of reservoir and hydrocarbon potential would be required for the Ellerslie member and the Wabamun, Nisku, and Leduc Formations.

In this example, the release rate will be based on the potential of encountering 10 m of gas in the Ellerslie member, gas in the Nisku Formation, and 20 m of gas cap gas in the Leduc Formation. The formation thicknesses of the Ellerslie and Leduc have been determined from the data presented below and meet the requirement to adjust the H_2S release rate to reflect the maximum potential thickness encountered.

Geological Impact on the Release Rate

Ellerslie Member

The Ellerslie member is a mixed sequence of sand and shale with potential for encountering hydrocarbon. The well in the adjoining section contains 20 m of wet sands. Since the well is anticipated to encounter the Ellerslie 10 m structurally higher, there is potential for encountering 10 m of hydrocarbon. The oil pools in the area have associated gas caps.

Wabamun Formation

Based on the available information (production, well logs, perforation recoveries, and drillstem tests), the Wabamun Formation is a productive gas reservoir 3 km updip of the proposed well location. Recovery information from intervening wells updip and downdip of the proposed location indicate that the Wabamun Formation is wet. Therefore, it would be reasonable to conclude that this interval would be wet.

Nisku Formation

The applicant does not identify the Nisku on Schedule 4: Well Purpose. Within 5 km of the proposed well there are two Leduc Formation producers in the area that are overlain by the Nisku intervals that tested gas. Therefore, Nisku Formation potential must be considered. To obtain five reliable data points, the search area required expansion to 10 km.

Leduc Formation

Existing Leduc Formation production in the area indicates that some oil pools have associated gas caps. The potential for encountering a gas-bearing interval must be considered. Based on available well structure information, the maximum anticipated gas cap thickness is 20 m.

Geological Mapping

As per the requirements detailed in Section 7.10.15.2, a geological map must be provided for all prospective formations that the applicant has identified or will identify on Schedule 4: Well Purpose, as its primary and secondary zones that may contain H_2S gas. Maps are not provided in this case study. The following map descriptions are intended to illustrate examples of the annotated maps and are not intended to be inclusive. An applicant may provide any additional information considered appropriate to substantiate its interpretation. In this example the annotated maps must illustrate the following:

For the Ellerslie Member

- productive Ellerslie pools in the area relative to the proposed well location
- the geological interpretation of the expected reservoir thickness at this location and the interpreted thickness of the reservoir within productive pools
- reservoir thickness of the offset well used as an analog containing the 20 m of wet sandstone
- structure elevation of the proposed location illustrating the 10 m relative difference in elevation between the offset well and proposed location

For the Leduc Formation

- productive Leduc pools in the area relative to the proposed well location; the map should illustrate the geological interpretation of the expected reservoir thickness at this location and the interpreted thickness of the reservoir within productive pools

Engineering Discussion

Ellerslie Member

The Ellerslie produces both gas and oil from pools with concentrations of H_2S ranging from 0.0 to 2.0%. Some wells located within the pools have encountered associated gas caps that range from 2 to 6 m in thickness. Engineering information indicates that AOFs range from 10 to 30 10^3 m^3/day. The maximum AOF was measured at a well with 5 m of net pay. The AOFs are extrapolated from drillstem tests (DSTs) conducted over the gas portion of the pool. Adjusting the highest AOF for the anticipated pay in the proposed well results in an AOF of 60 10^3 m^3/d. The highest H_2S concentrations were reviewed and determined to be from wells that were oil producers when sampled and were, therefore, discounted. The next highest H_2S concentration is 0.07 %. This was sampled from an oil well that has a DST over the gas zone. The H_2S concentration of 0.07% was used, along with the AOF of 60 10^3 m^3/d to arrive at a release rate of 0.005 m^3/s.

Nisku Formation

The Nisku tested gas in some wells that are producing from the Leduc pools. Engineering information indicates that the H_2S concentration ranges from 5 to 6.5% and that the AOFs range from 10 to 50 10^3 m^3/d. An AOF of 50 10^3 m^3/d and an H_2S concentration of 6.5% were used to estimate a release rate of 0.04 m^3/s. Although the analog well was stimulated prior to testing, a skin of 0.0 was reported and therefore no correction for skin was required.

Leduc Formation

Producing Leduc pools have encountered associated gas caps containing H_2S. Total reservoir thickness of the Leduc ranges from 10 to 20 m. Engineering information indicates that the H_2S concentration ranges from 8 to 10% and that AOFs range from 70 to 170 10^3 m^3/d. The maximum AOF was measured at a well with 15 m of net pay. Adjusting the AOF of 170 10^3 m^3/d from 15 m of pay to 20 m of pay resulted in an AOF of 227 10^3 m^3/d. The highest H_2S concentration was from a gas sample listed with a sample point of "other." A review of the hard copy indicates that the sample point was a meter run; therefore, it will be used. Combining the AOF and the H_2S concentration results in an H_2S release rate of 0.26 m^3/s. Since the analog well used was stimulated (fractured) prior to testing, the AOF test data were reviewed to determine the reported skin. Using the skin of -4 resulted in a prestimulation AOF and an H_2S release rate of 126 10^3 m^3/d and 0.15 m^3/s respectively.

Cumulative Release Rate

Based on the review done for each formation, the drilling release rate for the well is 0.20 m^3/s and the completion/servicing release rate is 0.26 m^3/s. In this case, it is assumed that the correction for flow to surface up tubing is minimal and the suspended/producing release rate is 0.26 m^3/s. In some cases an applicant may choose to make a correction for flow to surface up tubing. If the adjustment for stimulation was not done for the Leduc Formation, the drilling, completion/servicing, and suspended/producing release rates would have been reported as 0.31 m^3/s.

Tabulated Data

Tabulated data must be submitted to the ERCB with the complete documentation package prepared for each well licence application but are not shown here.

Appendix 9 Stepped-Approach to Licensing Gas Batteries

The *Directive 056* definition of a gas battery has been revised to coincide more with the battery definition found in the *Oil and Gas Conservation Act* such that the installation and use of hydrocarbon product and/or produced water tanks at the facility site are the defining factors when licensing surface equipment as a gas battery (see Appendix 3).

The requirements set out in Section 5.5.1 for single-well sweet production sites are still applicable. However, in the case of a single-well sour gas site ($H_2S > 10$ ppm), the following has been incorporated into Section 5.5.1:

> An application is not required under *Directive 056* if the facility is a single-well **gas** site where the H_2S content is greater than 0.01 mol/kmol and
>
> - there are no liquid hydrocarbon/produced water tanks,
> - there is no gas compression,
> - there is no gas processing, and
> - there is no injection/disposal component.

Single-well sour line heaters located at a well site lease do not require a *Directive 056* facility licence application.

Gas Battery Licensing Matrix

The table on the next page provides scenarios to assist companies in determining if the equipment proposed for installation requires the submission of a *Directive 056* facility licence application. When using this table, please note the following:

- Production scenarios are applicable to gas production facilities only.
- Single-well scenarios are defined as one wellbore with a single producing zone or multiple zones producing commingled within one wellbore.
- Multiwell scenarios will continue to be based on the production scenarios outlined in Section 5.4:
  a) multiple zones are producing from one wellbore, but the production remains segregated (i.e., not commingled in the wellbore);
  b) production from a second well is pipelined to an existing single-well facility; or
  c) multiple single-well facilities are operating within one lease.
- Scenarios for which a *Directive 056* application is not required must meet all measurement, accounting, and reporting requirements set out in the *Oil and Gas Conservation Act* and *Regulations* and all applicable guides and directives published by the ERCB.
- All applications will continue to be required for compressors regardless of kW rating if the H_2S content of the inlet gas is > 10 ppm (see Section 5.5.1).

Case	Surface equipment	Single gas well H_2S content < 0.01 mol/kmol	Single gas well H_2S content > 0.01 mol/kmol	Multiwell gas H_2S content < 0.01 mol/kmol	Multiwell gas H_2S content > 0.01 mol/kmol
1	**Any combination of** • ESD • Measurement • Emergency flare system • Line heater • H_2S scavenger • Chemical injection • Separation • Dehydration	No requirement for a facility licence application	No requirement for a facility licence application	No requirement for a facility licence application	No requirement for a facility licence application
2	**Any combination of** • ESD • Measurement • Emergency flare system • Line heater • H_2S scavenger • Chemical injection • Separation • Dehydration **AND** Compressor < 75 kW	No requirement for a facility licence application	*Directive 056* facility licence required for C340 (compressor station < 1t/d sulphur inlet) or D440 (compressor station > 1 t/d sulphur inlet)	No requirement for a facility licence application	*Directive 056* facility licence required for C340 (compressor station < 1t/d sulphur inlet) or D440 (compressor station > 1 t/d sulphur inlet)
3	**Any combination of** • ESD • Measurement • Emergency flare system • Line heater • H_2S scavenger • Chemical injection • Separation • Dehydration **AND** Compressor > 75 kW	*Directive 056* facility licence required for B040 (compressor station < 0.01 mol/kmol H_2S)	*Directive 056* facility licence required for C340 (compressor station < 1t/d sulphur inlet) or D440 (compressor station > 1 t/d sulphur inlet)	*Directive 056* facility licence required for B040 (compressor station < 0.01 mol/kmol H_2S)	*Directive 056* facility licence required for C340 (compressor station < 1t/d sulphur inlet) or D440 (compressor station > 1 t/d sulphur inlet)

Case	Surface Equipment	Single gas well H_2S content < 0.01 mol/kmol	Single gas well H_2S content > 0.01 mol/kmol	Multiwell gas H_2S content < 0.01 mol/kmol	Multiwell gas H_2S content > 0.01 mol/kmol
4	**Any combination of** • ESD • Measurement • Emergency flare system • Line heater • H_2S scavenger • Chemical injection • Separation • Dehydration • Compressor < 75 kW **AND** Liquid hydrocarbon/produced water tanks	No requirement for a facility licence application	*Directive 056* facility licence required for C310 (single well < 1 t/d sulphur inlet) or D410 (single well > 1 t/d sulphur inlet)	*Directive 056* facility licence required for B020 (multiwell < 0.01 mol/kmol H_2S)	*Directive 056* facility licence required for C311 (multiwell < 1 t/d sulphur inlet) or D411 (multiwell > 1 t/d sulphur inlet)
5	**Any combination of** • ESD • Measurement • Emergency flare system • Line heater • H_2S scavenger • Chemical injection • Separation • Dehydration • Compressor > 75 kW **AND** Liquid hydrocarbon/produced water tanks	*Directive 056* facility licence required for B040 (compressor station < 0.01 mol/kmol H_2S)	*Directive 056* facility licence required for C310 (single well < 1 t/d sulphur inlet) or D410 (single well > 1 t/d sulphur inlet)	*Directive 056* facility licence required for B020 (multiwell < 0.01 mol/kmol H_2S)	*Directive 056* facility licence required for C311 (multiwell < 1 t/d sulphur inlet) or D411 (multiwell > 1 t/d sulphur inlet)

Appendix 10 Surface Equipment Scenarios

On-site surface equipment determines facility licence requirements. To assist applicants in determining when an application is required, surface equipment scenarios are given below.

Case 1

A new facility will comprise a free water knockout, a separator, and a water disposal well. The inlet feed consists of oil (731 m^3/d), water (1169 m^3/d), and gas (66 10^3m^3/d), and the H_2S content of the gas stream is 25 mol/kmol. Oil and gas are recombined and pipelined to another battery, while the water is measured and disposed of at the facility site.

Action: Application is required for a licence as a sour satellite with an injection/disposal component. The primary purpose of the facility is to handle oil production and test individual well production; the process description (recombining after measurement and pipelined elsewhere) matches as the current definition of a satellite, and it is operationally acceptable to have a water disposal component associated with a satellite.

Case 2

An existing licensed compressor station with 0.0 mol/kmol H_2S is experiencing hydrocarbon dew point problems. A desiccant system is needed to produce pipeline spec gas. Condensate recovery will be less than 2 m^3/d. No other changes will occur (e.g., emissions, category, or type).

Action: No application is required to install the dew point control system. It will remain a compressor station. The dew point control system is not recovering condensate volumes greater than 2 m^3/d (threshold volume as per the "Gas Processing Facility" definition, so no change to the current category type will occur).

Case 3

A Joules-Thomson (JT) unit is being installed for hydrocarbon dew point control.

Action: Provided the liquids recovery remains less than 2 m^3/d and no additional emissions sources are generated, the facility would not be licensed as a processing plant. This applies to all desiccant and JT units.

Case 4

A new 50 kW compressor is added to an existing licensed facility with greater than 0.01 mol/kmol H_2S.

Action: No application is required for the installation of one compressor less than 75 kW provided that the landowner has been notified and the facility continues to meet all applicable requirements (see Appendix 9).

Case 5

Production from a single gas well (with 20 mol/kmol of H_2S) is routed through an inlet separator where gas and liquids are measured. The gas enters the gathering system, while the liquids are stored in a tank until trucked out. Tank vapours are tied to a flare system.

Action: A single-well gas battery (Category C or D) application is required. An application is not required if the H_2S content is less than 0.01 mol/kmol.

Case 6

An existing tank farm requires reconfiguration where one tank will be discontinued, a liner will be installed in the dike area, and the tank farm perimeter will be decreased.

Action: No application is required; however, the facility must continue to meet the storage requirements of *Directive 055*.

Case 7

A water/EOR injection/disposal component is being added to an existing licensed facility and/or well site.

Action: An application is required. If added to an existing licensed facility, its original category and type are retained. If operating as a standalone process at a well site, it should be licensed as an injection/disposal facility.

Case 8

Dehydration is being installed at an "exempt activity" facility where the H_2S content is less than 0.01 mol/kmol and no compression or gas processing is occurring.

Action: No application is required.

Case 9

A new facility with 0 mol/kmol of H_2S is being constructed and will include the installation of an amine unit for CO_2 removal.

Action: Application required for Category B gas processing plant.

Case 10

New flare or incinerator points are being added to an existing category C, D, or E facility.

Action: Application required to amend an existing facility.

Case 11

Replacing existing flare or incinerator points with stacks of equal or greater height (or dispersion characteristics).

Action: No application required, since there will be no change to the category type or no increase in emissions.

Case 12

Surface equipment includes ESD, meter run, and line heater where the inlet gas H_2S is less than 0.01 mol/kmol (10 ppm).

Action: No application required.

Case 13

A line heater is added to an existing Category C facility, and as a result, the total NO_x emissions increase but the category type remains the same.

Action: Licence amendment application required.

Case 14

A temporary electric compressor is required while the gas unit is under repair.

Action: No application required provided that the landowner has been notified and has no concerns.

Case 15

A single oil well battery with 0.0 mol/kmol of H_2S is being modified to accommodate the increase in the H_2S content to 1.0 mol/kmol, and a flare system will be added.

Action: Application required for a Category C or D single oil well battery.

Case 16

An existing single-stage compressor is reconfigured to two-stage compression.

Action: No application required. The company must advise the local ERCB Field Centre of the activity.

Case 17

An applicant intends to test an oil well (where the H_2S content of the solution gas is 25 mol/kmol) for a three-month period

Action: Application for a temporary Category C or D facility is required, and a licence must be obtained before well testing may commence (see *Directive 060*).

Case 18

An additional glycol pump is required at an existing Category C facility.

Action: No application required to install process pumps; only the installation of injection/disposal pumps will require licensing.

Case 19

A free-water knockout (FWKO) is required at a satellite location.

Action: No application required to install the FWKO; however, if there is an injection/disposal component associated with the FWKO, an application is required.

Case 20

The solution gas volumes at a Category C oil battery warrant conservation at this time. The operator proposes to conserve the solution gas by using it to generate electric power for the oil battery operations.

Action: The operator must receive approval from the Alberta Utilities Commission (AUC) for the installation of the equipment for the power generation portion of the project. The remaining equipment remains licensed under *Directive 056* and the licence should include emissions from all sources on-site, including power generation equipment. If selected for audit review, a copy of the AUC approval will be required.

Case 21

The solution gas volumes at an existing licensed oil facility warrant conservation at this time. The licensee proposes to conserve the solution gas by processing the solution gas stream and recovering liquids.

Action: The primary purpose of the facility is to handle oil production; it is the increase in solution gas volumes that warrants the addition of gas processing equipment. The licensee must amend its existing oil battery licence to reflect that conservation is now occurring and file a separate application (new) for the gas processing portion of the operation. In rare instances such as these, Facilities Applications will issue two separate licences for one surface location.

Case 22

A 56 kW water injection pump and water tank are being added to an existing facility.

Action: Application required to add the injection component.

Case 23

An applicant intends to construct a new multiwell oil battery that will require a nonregenerative sweetening process. The facility inlet is less than 0.1 t/d of sulphur.

Action: An application is required for a Category C multiwell oil battery.

Case 24

A long-term flare test (more than 21 days) is being conducted on a coalbed methane (CBM) well (H_2S content is 0.0 mol/kmol). Temporary facilities at the well site include a separator, measurement equipment, water storage tanks, and a flare or incinerator. Typical of CBM gas, there is no measurable H_2S content.

Action: No application is required. However, the licensee should disclose its intention to conduct longer-term testing as part of the well application consultation process. It must complete public notification as described in *Directive 060*, Section 3, prior to test flaring. If any concerns/objections to the longer-term test and/or test facilities are received, Facilities Applications may require an application.

Case 25

An operator intends to install a nonregenerative sweetening process at an upstream oil or gas facility to treat gas with less than 0.1 t/d sulphur inlet. Additional equipment includes storage tanks and separators.

Action: The surface equipment as described requires a licence as a Category C oil or gas battery.

Case 26

A single well is producing oil (<0.01 mol/kmol H_2S) from one formation and is completed for dry gas (<0.01 mol/kmol H_2S) from another formation. Production for the oil zone comes to surface segregated from the gas where there is equipment for separation and measurement, including a storage tank. The gas zone is effluent measured (no separation) and combined with the solution gas from the oil well.

Action: This facility should be licensed as a multiwell oil battery (B030). If there were more significant gas production equipment (e.g., compression, dehydration), the site could be licensed as a multiwell gas battery (B020).

Case 27

A series of gas gathering lines (<0.01 mol/kmol H_2S) are brought to a single lease where gas is combined into a header system and into a 400 kW compressor. In the compressor design, there are suction scrubbers located ahead of the inlet to each stage of compression. The scrubbers drain into a drain tank on lease.

Action: This facility should be licensed as a compressor station (B040). The scrubbers take out any residual water of condensation that may form in the upstream pipeline before compression. If a separator were to be located upstream of the compressor, the facility would need to be licensed as a gas battery – multiwell. If the only inlet to the compressor were an on-site single-well gas battery (< 0.01 mol/kmol H_2S) that included storage of produced water, the facility would still be a compressor station, as the single-well battery would be exempt from licensing.

Appendix 11

ERCB Public Documents

1) Letter from the Chairman of the ERCB

2) ERCB Brochure: Understanding Oil and Gas Development in Alberta

June 2008

ERCB Energy Resources Conservation Board
Calgary Office 640 – 5 Avenue SW Calgary, Alberta, Canada T2P 3G4 Tel 403-297-8311 Fax 403-297-7336 www.ercb.ca

A Letter from the Chairman of the ERCB

Dear Neighbour,

I am writing to you because a representative of a petroleum company proposing development has recently approached you, and you may have questions. The company plans to make an application to the Energy Resources Conservation Board (ERCB) for an energy development (which may include a facility, a pipeline, or a well) on your lands or your neighbours' lands. The ERCB requires the company to either notify or personally consult with you before obtaining a licence and provide you with information that may include the documents described below. When the ERCB does not require that the documents be provided, you may request them from the company.

ERCB Public Information Documents—These include this letter, the brochure Understanding Oil and Gas Development in Alberta, EnerFAQs No. 7: Proposed Oil and Gas Development—A Landowner's Guide and the EnerFAQs series related to energy development. These documents contain information about your rights and options, as well as the roles and responsibilities of the ERCB in the regulation of Alberta's energy developments and how we can help you.

Company's Information Package—This includes sufficient information about the proposed project so that you can understand the nature, scope, and potential impacts the proposed development may have on you and your family. You will be asked to bring forward any questions or concerns you may have and to go over the specifics of the proposed development with the company representative. The company is required to answer all reasonable questions posed by you.

I encourage you to carefully review the information provided and to meet with company representatives to discuss the proposed development. The conversation should include any measures that could be put in place by the company to reduce potential impacts, alternatives to the proposal that may exist, and the overall future development proposed for your area.

If there are matters that cannot be resolved, the ERCB can provide you with more information on its Appropriate Dispute Resolution (ADR) program, which includes ERCB facilitation and third-party mediation. Unresolved issues could ultimately result in the ERCB holding a public hearing to consider the application. While the ERCB encourages all parties to first attempt to cooperatively reach agreement, all should be aware that they have the right, at any time, to request that the ERCB hold a public hearing.

If you have questions about our materials or our processes, please call the ERCB for assistance at the numbers listed on the back of this letter.

Additional information about the ERCB and its regulations are on our Web site at www.ercb.ca.

Sincerely,

Dan McFadyen.
Chairman

ERCB Field Centres and Contacts

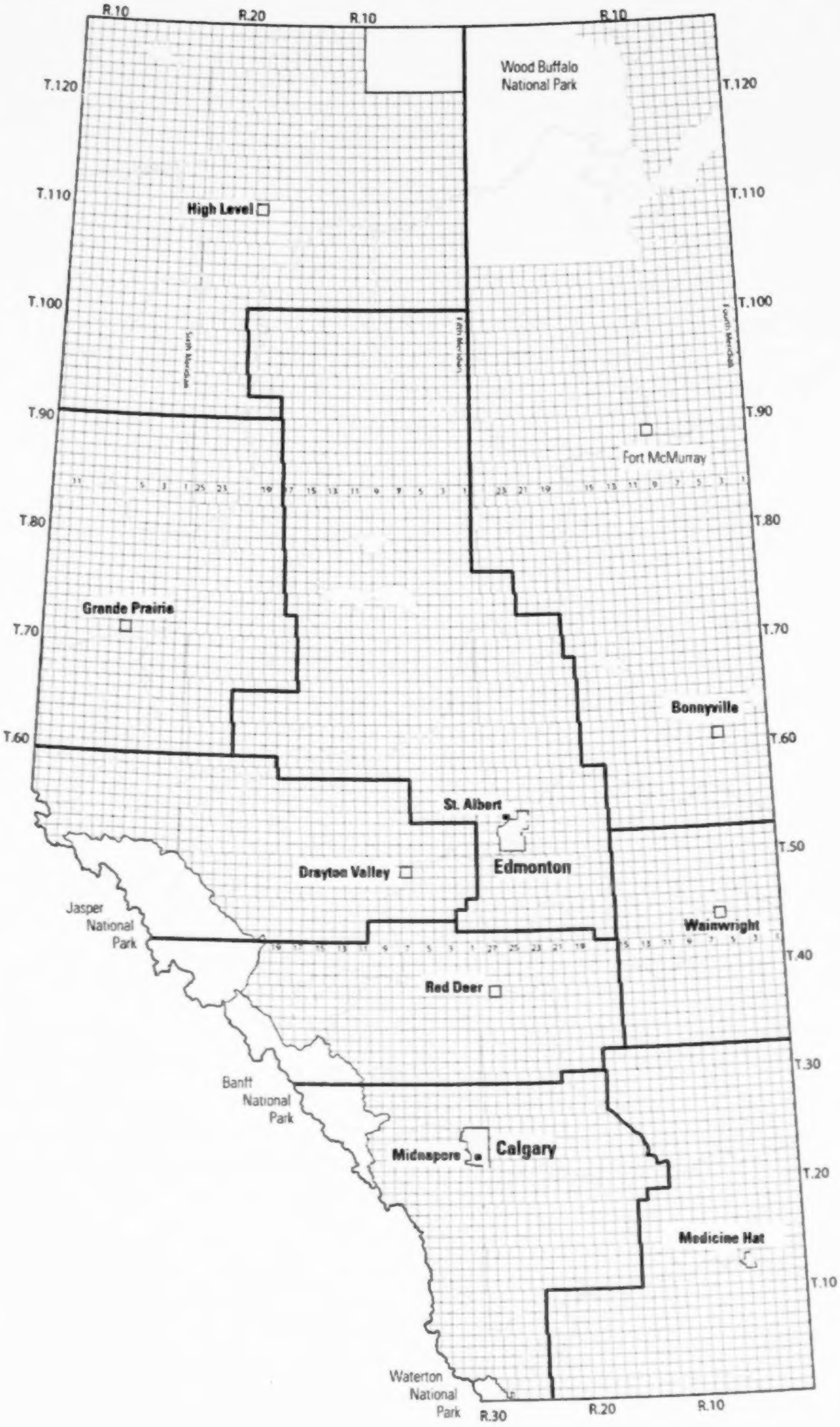
Field Centres

Bonnyville
780-826-5352
Drayton Valley
780-542-5182
Grande Prairie
780-538-5138
High Level
780-926-5399
Medicine Hat
403-527-3385
Midnapore
403-297-8303
Red Deer
403-340-5454
St. Albert
780-460-3800
Wainwright
780-842-7570

Fort McMurray Regional Office
780-743-7214

Calgary Head Office
Customer Contact Centre
403-297-8311
Web site www.ercb.ca

Facilities Applications Group
403-297-4369 (Help line)
E-mail address
Directive56.help@ercb.ca
Facilitation Team
403-297-3700 (Help line)
E-mail address
ercb.adr@ercb.ca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High Level
Sixth Meridian
Fifth Meridian
Fourth Meridian
Fort McMurray
Grande Prairie
Bonnyville
St. Albert
Edmonton
Drayton Valley
Wainwright
Jasper National Park
Red Deer
Banff National Park
Midnapore
Calgary
Medicine Hat
Waterton National Park
R.30
R.20
R.10

To call the above numbers toll free, dial 310-0000 and follow the prompts or ask the operator for the desired number.

ERCB Brochure: Understanding Oil and Gas Development in Alberta

This brochure contains basic information to help you understand what sort of development is being proposed and how it affects you.

An oil and gas company representative has approached you and wants to conduct oilfield activities on or near your land. You and the company will be discussing the proposed development and its potential impact on you, as well as alternatives and measures to minimize impacts. You may also be negotiating a surface lease agreement (for example, on the location of a well and access road) and discussing compensation.

ERCB Requirements and Expectations for Participant Involvement

The ERCB believes that any individual, organization, community, or group with a stake in Alberta's energy resources is a participant, having both roles and responsibilities. All participants are encouraged to develop relationships that are respectful, responsive, and responsible. While other groups also have a stake in energy development, the three main participant groups are the public, industry, and the ERCB.

The public: The ERCB application process provides the public with an opportunity to share its questions and concerns with the company. There are many things the public, individually or collectively, can do to participate in the planning of proposed developments. Many communities have formed groups with members from industry and the ERCB. These groups try to find ways to resolve issues at the local level. The company will provide you with contact information if there is a group in your area.

Industry: Industry is required to notify and if necessary consult with people whose rights may be directly and adversely affected by proposed development. Industry is expected to consult with other interested parties it identifies from a regional review of needs and issues. Industry is also expected to communicate with landowners and residents on a regular basis throughout the life of the project, which may be 30 years or longer.

The ERCB: As the regulator of the energy industry, the ERCB has the authority to approve or deny proposed energy developments in the province of Alberta and to place enforceable conditions on any licences issued. The ERCB also assists individuals, communities, and other interested groups to understand the regulatory requirements and expectations and how they apply at the local level.

Your Rights and the Company's Rights

In Alberta, both the landowner and the company have rights.

Rights to information: Under ERCB regulations, requirements, and guidelines, the company must provide information to all parties whose rights may be directly and adversely affected by a proposed project so they can fully understand what is being proposed. If you are concerned about surface impacts, the company must give you details about how and why it chose the proposed well site, pipeline route, and access road location. The company should also tell you what to expect in terms of equipment and operations during the production phase.

The company may provide any agreements you make with it, as well as records of discussions, to the ERCB during the application process. That material becomes part of the ERCB's record of the application, which is a public record available to anybody. In addition, information provided to the ERCB (whether as part of the application process or otherwise) may be publicly available under the *Freedom of Information and Protection of Privacy Act*. The exception to this is agreements made in Appropriate Dispute Resolution, which are confidential.

Mutual rights to use the land: Most land in Alberta carries two titles and two sets of rights. The surface title gives the landowner full control of the land's surface and the right to work it. The mineral title gives the company or person who owns the minerals under that land the right to explore for oil and gas. In some situations, title to land will give the owner both the surface and the mineral rights. If title to the land is split, the mineral owner needs access to the land surface to drill and produce oil and gas.

Two important conditions apply to the company's right to explore. First, drilling and production activity must be done in a way that is environmentally and technically acceptable. Second, a company must operate in ways that minimize possible interference with the landowner's use of the land.

Planning an Oil or Gas Project

Selecting a Pipeline or Facility Location

When selecting a pipeline right-of-way or a facility site, the company must consider potential impacts on present and future land uses. The company must

- ensure that you understand what substance the pipeline is to transport or the facility is to handle,
- answer your questions on its plans for soil handling and reclamation, and
- address any other concerns you may have related to the proposed pipeline or facility.

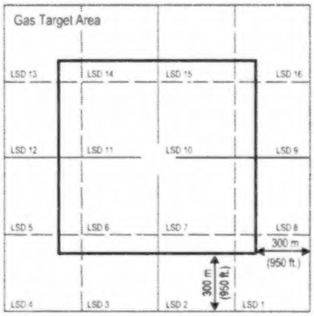
Selecting a Well Site

When selecting a well site, the company considers subsurface geology, land surface conditions, current and future land use, environmental sensitivity, and reclamation. Well spacing regulations provide requirements about where wells may be located.

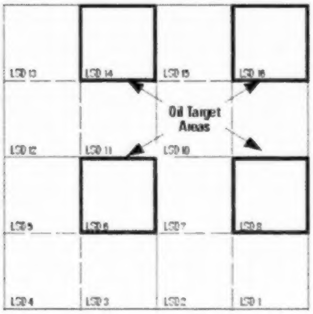
A **spacing unit** is the subsurface area that one well can drain. The spacing unit for oil wells in Alberta is normally one well per quarter section of land; for gas wells it is normally one well per section of land. However, reduced spacing and directional drilling are common practices in Alberta.

Inside the spacing unit is a **target area** where the bottom of the well should end.

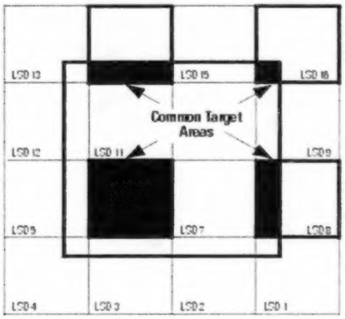
In the example below, the **gas target area** is the centre 100 hectares (250 acres) of the section. Keep in mind that the target area dictates the **subsurface** location for a well, not the **surface** location.



The **oil target area** is the northeastern 16 hectares (40 acres) of the quarter section, as shown in the example below.


LSD 13
LSD 14
LSD 15
LSD 16
Oil Target Areas
LSD 12
LSD 11
LSD 10
LSD 5
LSD 6
LSD 7
LSD 8
LSD 4
LSD 3
LSD 2
LSD 1

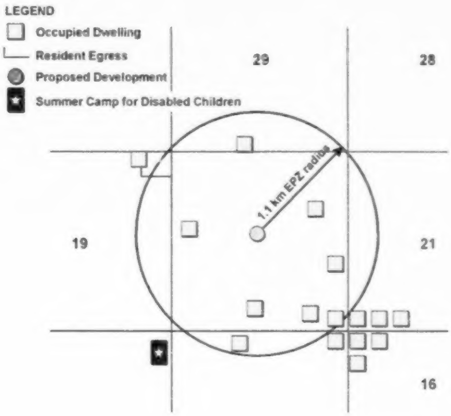
Together, the oil and gas target areas overlap and form a **common target area**, as shown in the shaded portions of the figure below. Many companies prefer to drill the common target area if there is a chance to encounter both oil and gas.


LSD 13
LSD 15
LSD 16
Common Target Areas
LSD 12
LSD 11
LSD 9
LSD 5
LSD 7
LSD 8
LSD 4
LSD 3
LSD 2
LSD 1

If you disagree with a proposed well location, you may ask the company representative to sketch the spacing unit and target area for the well. This will help you determine if there is flexibility for moving the well site.

Consultation

In many instances it is appropriate for a company to complete public consultation and notification beyond the requirement stated in ERCB Directive 056: Energy Development Application and Schedules. The following figure illustrates how a company expanded its participant involvement program beyond the requirement to take into account the special needs and circumstances of the community.


LEGEND
Occupied Dwelling
Resident Egress
Proposed Development
Summer Camp for Disabled Children
29
28
19
21
16
1.1 km EPZ radius

During the initial planning stage of a well, a company began preliminary development of its participation involvement program using the public consultation and notification requirements. With further development of the participant involvement program, the company identified that the requirements would not take into account egress of the resident just outside the northwest area of the development, residents in the community to southeast of the development, or the special needs of the summer camp for disabled children located in the southwest.

The company then adapted its participant involvement program to include the residents, summer camp, and community. By including all the parties during the initial planning stages, the company was able to identify and address the concerns raised by the residents and summer camp prior to its application to the ERCB.

Having Your Say

Landowners, residents, and communities that have concerns related to the development of Alberta's energy resources should become involved as early as possible in the development planning process. It is usually easier to resolve issues at the local level before they become matters of greater concern. Ongoing dialogue also builds trust and is one way for you to have greater influence on energy development.

The table on the next page shows a number of options available to help you resolve concerns about proposed development. As a landowner or resident, there are several key points in the application process when your questions and concerns may be addressed. Note, though, that you have the right to expect any reasonable concerns to be promptly addressed at any point during this process and at any time during the life of the project.

Usually, a company will offer to consult with you at your home. If you and the company cannot resolve your concerns, either party may ask an ERCB staff member to facilitate a meeting or meetings between you and the company. This is "field facilitation."

If objections continue to be unresolved, you or the company may request that the ERCB arrange for a third-party mediator to assist you. This is part of the Appropriate Dispute Resolution (ADR) process. The company may also request a hearing at this time. If you can resolve issues through such discussions with the company, with or without a facilitator or mediator, you may find that you have greater influence on project planning and reducing its impacts. However, if objections cannot be resolved, the application may go to an ERCB hearing, where the matter will be decided by the ERCB Board.

If you show the ERCB, through a written submission, that your rights may be directly and adversely affected if the Board approves a proposed energy development and you have been unable to resolve your concerns through field facilitation or ADR, you may trigger a public hearing.

The ERCB examines each submission on its own merits to determine the potential impacts on you, taking into account the following factors:

- Does the proposed project have the potential to affect safety or economic or property rights? Examples of such impacts include negative effects from contaminants in water, air, or soil or from noise; negative interference with livelihood or commercial activity on the land; damage to property; and concerns for the safety of persons or animals.
- Are you affected in a different way or to a greater degree than members of the general public?
- Are you able to show a reasonable and direct connection between the activity complained of and the rights or interests you believe to be affected?

By considering your submission in this way, the ERCB can determine if you may be directly and adversely affected by the proposed development.

Having Your Say: Options for Resolving Concerns

Step One	Option One	Option 2	Option 3
Required Consultation or Notification	**ADR - Facilitation**	**ADR - Third-Party Mediation**	**ERCB Hearing**
Directive 056 requires industry to notify or consult with those persons whose rights may be directly and adversely affected by proposed developments.	If you have concerns after the required consultation process, an ERCB staff member may be asked to assist. Either you or the company may make this request. Facilitation is the first stage of the Appropriate Dispute Resolution (ADR) process and is optional.	If your concerns remain unresolved, a neutral third-party mediator may be brought in to assist. This is the next stage of the ADR process and is also optional. Agreements made in ADR are confidential. This option may be chosen even if a hearing has been scheduled. It is possible to avoid a hearing if concerns are resolved at this stage.	If third-party mediation fails to resolve your concerns, the matter may go to an ERCB public hearing for a decision.

Further information regarding the ERCB Appropriate Dispute Resolution process is available on the ERCB Web site http://www.ercb.ca/portal/server.pt/gateway/PTARGS_0_0_272_230_0_43/http%3B/extContent/publishedcontent/publish/ercb_home/public_zone/ercb_process/appropriate_dispute_resolution__adr_/.

Required EnerFAQs

The ERCB has put together a number of EnerFAQs on topics of general interest to the public. Regardless of whether the proposed development is a well, pipeline, or facility, the company must either provide or offer the following EnerFAQs:

- No. 4: All About Critical Sour Wells
- No. 5: Explaining ERCB Setbacks
- No. 6: Flaring and Incineration
- No. 7: Proposed Oil and Gas Development—A Landowner's Guide
- No. 8: Coalbed Methane
- No. 9: The ERCB and You: Agreements, Commitments, and Conditions
- No. 10: Public Health and Safety: Roles and Responsibilities of Agencies That Regulate Upstream Oil and Gas
- No. 11: All About Appropriate Dispute Resolution (ADR)

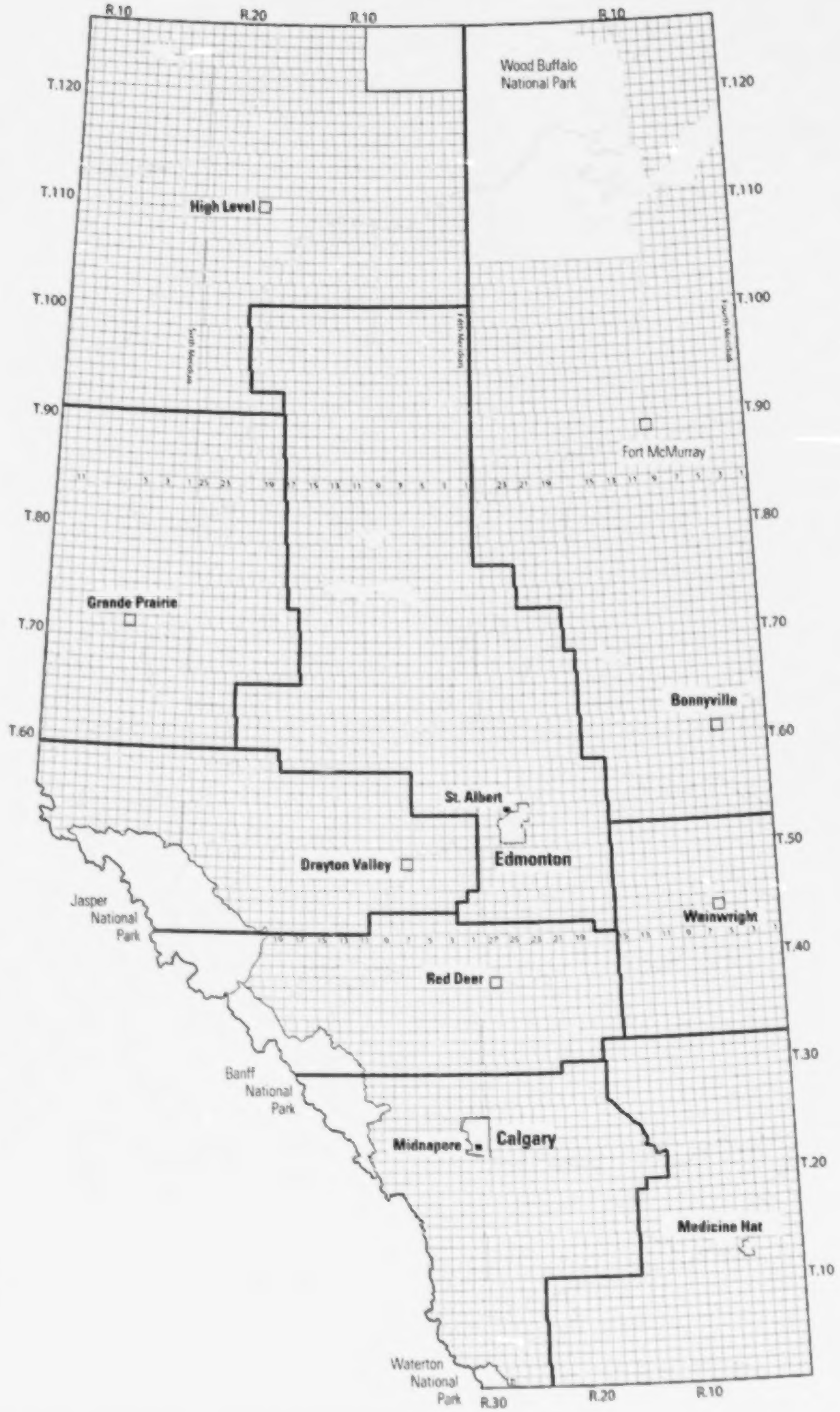
EnerFAQs continue to be published on topics of general interest to the public. As new EnerFAQs related to energy development become available they will be posted to the *Directive 056* Web page.

EnerFAQs may also be obtained from the ERCB Web site at www.ercb.ca or by contacting ERCB Communications at 403-297-8311.

ERCB Field Centres and Contacts

Field Centres

Bonnyville
780-826-5352
Drayton Valley
780-542-5182
Grande Prairie
780-538-5138
High Level
780-926-5399
Medicine Hat
403- 527-3385
Midnapore
403-297-8303
Red Deer
403-340-5454
St. Albert
780-460-3800
Wainwright
780-842-7570
Fort McMurray Regional Office
780-743-7214
Calgary Head Office Customer Contact Centre
403-297-8311
Web site www.ercb.ca
Facilities Applications Group
403-297-4369 (Help line)
E-mail address
Directive56.help@ercb.ca
Facilitation Team
403-297-3700 (Help line)
E-mail address
ercb.adr@ercb.gov.ab.ca


R.10
R.20
R.10
R.10
T.120
T.110
T.100
T.90
T.80
T.70
T.60
T.50
T.40
T.30
T.20
T.10
Wood Buffalo National Park
High Level
Sixth Meridian
Fifth Meridian
Fourth Meridian
Fort McMurray
Grande Prairie
Bonnyville
St. Albert
Edmonton
Drayton Valley
Wainwright
Jasper National Park
Red Deer
Banff National Park
Midnapore
Calgary
Medicine Hat
Waterton National Park
R.30
R.20
R.10

To call the above numbers toll free, dial 310-0000 and follow the prompts or ask the operator for the desired number.

Appendix 12 Understanding the Participant Involvement (PI) Process

This appendix outlines the rationale and both the required and suggested stages of the Participant Involvement process. It is intended to provide the energy industry with requirements and expectations to assist in participant involvement efforts, both in advance of submitting an application for energy development and throughout the life of a project.

The ERCB, acting in the public interest, intends to raise the regulatory standard for communications between industry and the public and between companies with respect to participant involvement.

"Participant involvement" is an umbrella term encompassing all aspects of public, industry, and regulator interactions and communications for oil and gas development. It implies that each organization, community, group, and individual with a stake in the discovery, development, and delivery of Alberta's resources is a participant and as such has both specific roles and responsibilities. While the three main participant groups in energy development are industry, the public, and the ERCB, it is recognized that other groups also have a stake in energy development.

Participant involvement is about fostering relationships among all participants that are respectful, responsive, and responsible. Such interactions demonstrate transparency, fairness, consideration of one another's concerns and pressures, and a commitment to work toward mutually satisfactory resolutions.

Roles and Responsibilities

Industry – Industry's role in PI is to help individuals and other companies to understand the proposed development and the impact it may have upon them. Industry's responsibility is to make a reasonable effort to resolve concerns prior to filing an application. The nature and extent of the applicant's obligation to consult with and notify persons whose rights may be directly and adversely affected depends upon the nature of the proposed development and the extent of likely impacts on those affected. As such, the requirements detailed in *Directive 056* should be viewed as a starting point that will be acceptable in most cases, but they may not be sufficient to address all circumstances.

The Public - The ERCB application process provides the public with an opportunity to engage with the applicant and to address concerns/objections. There are many steps that the public, individually or collectively, can take to participate in the planning of proposed developments. Early involvement in informal discussions with industry may lead to greater influence on project planning and mitigation of impacts. Accordingly, the public is strongly encouraged to participate in ongoing issue identification, problem solving, and planning with respect to local energy developments. The public is expected to be sensitive to the timing constraints on the applicant.

The ERCB - All concerns/objections regarding applications made by persons whose rights may be directly or adversely affected by an approval will be considered by the ERCB (*Energy Resources Conservation Act*, Section 26).

As the regulator of the energy industry, the ERCB has the authority to approve or deny proposed energy developments and to decide which parties have standing in cases of outstanding concerns/objections.

The ERCB assists all stakeholders to understand the regulatory requirements and expectations and how they apply at the local level. The ERCB works with multistakeholder groups to clarify regulatory issues, suggest problem-solving approaches, and facilitate communication.

The ERCB also supports issue mitigation and conflict resolution. It sponsors and encourages the use of innovative approaches to resolving concerns and conflicts, such as the Appropriate Dispute Resolution

(ADR) program. If resolution cannot be reached at the local level, parties whose rights may be directly and adversely affected may request an ERCB hearing.

Participant Involvement Process

The participant involvement process should begin at the conceptual stage and proceed in various forms through to abandonment and reclamation of the site. It is not limited to the pre-application stage of the project. During the participant involvement process, the applicant may move through five stages, depending on the complexity of the project and whether objections or concerns arise. Figure A1 details the ERCB's suggested participant involvement process and alternatives for dealing with public concerns/objections.

Stage 1: Planning oil and gas development proposal

Stage 2: Identifying and engaging potentially directly and adversely affected parties

Stage 3: Addressing concerns/objections

Stage 4: Addressing unresolved concerns/objections

Stage 5: Obtaining ERCB disposition

Stage 1: Planning oil and gas development proposal

Stage 1 of the participant involvement process begins with the applicant identifying the type of energy development required to meet its needs. Once that has been determined, the company is able to begin developing the appropriate personal consultation and notification program and information packages suited to the proposed energy development.

The applicant then prepares a personal consultation and notification program, which is essential prior to filing an energy development application. The ERCB expects that the level of participant involvement will be based on the complexity of and area sensitivities to the proposed project.

Directive 056 defines two types of participant involvement: personal consultation and notification. The purpose of personal consultation is to inform parties whose rights may be directly and adversely affected by the proposed application by

- distributing a project description and the ERCB public information package;
- identifying potential impacts;
- responding to questions and concerns;
- discussing options, alternatives, and mitigating measures; and
- seeking confirmation of nonobjection through cooperative efforts.

Notification differs from personal consultation in that communication takes place through written correspondence rather than face-to-face or telephone conversations.

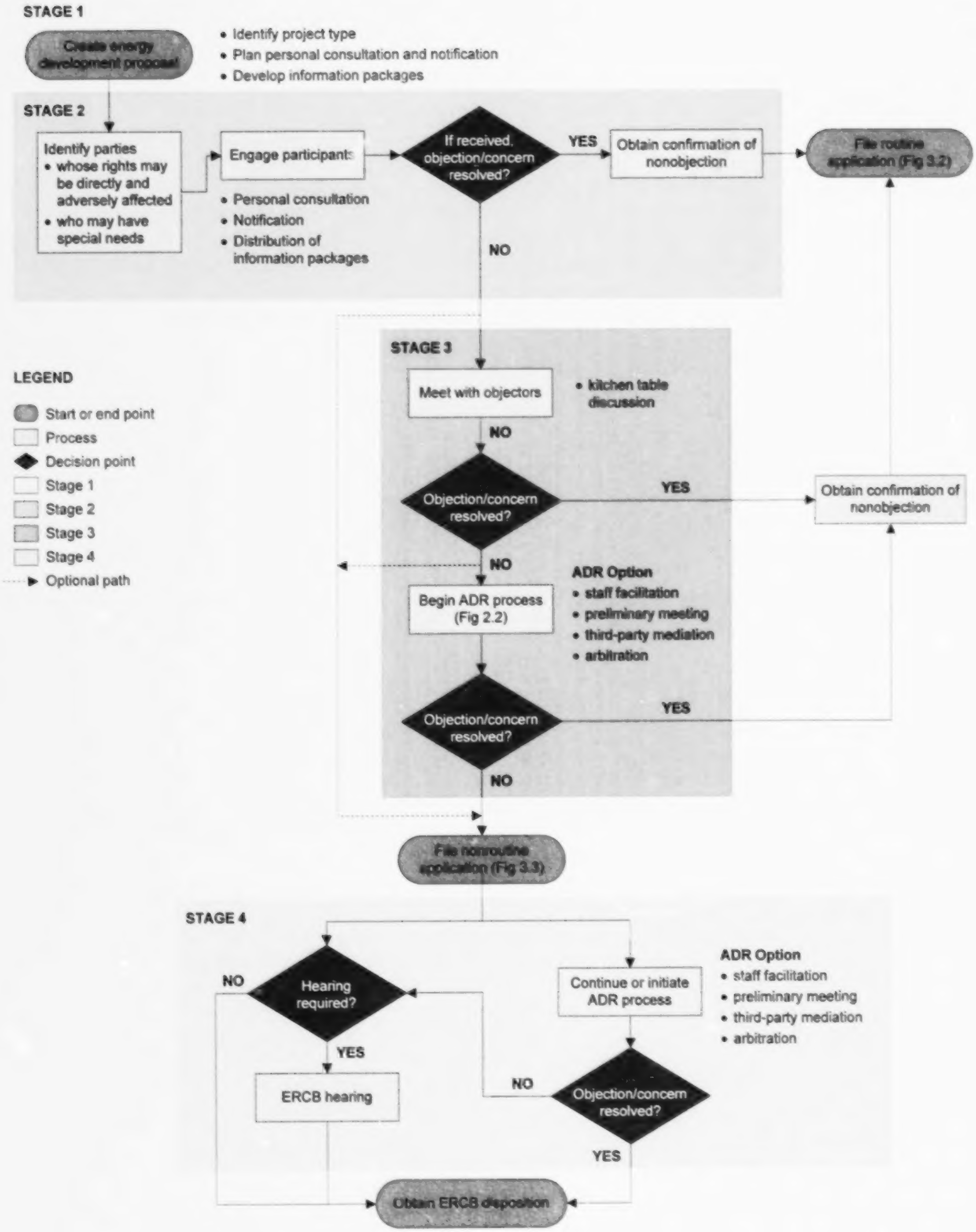

STAGE 1
Create energy development proposal
• Identify project type
• Plan personal consultation and notification
• Develop information packages
STAGE 2
Identify parties
• whose rights may be directly and adversely affected
• who may have special needs
Engage participants
• Personal consultation
• Notification
• Distribution of information packages
If received, objection/concern resolved?
YES
Obtain confirmation of nonobjection
File routine application (Fig 3.2)
NO
STAGE 3
Meet with objectors
• kitchen table discussion
NO
Objection/concern resolved?
YES
Obtain confirmation of nonobjection
NO
Begin ADR process (Fig 2.2)
ADR Option
• staff facilitation
• preliminary meeting
• third-party mediation
• arbitration
Objection/concern resolved?
YES
NO
File nonroutine application (Fig 3.3)
STAGE 4
Hearing required?
NO
YES
ERCB hearing
Continue or initiate ADR process
ADR Option
• staff facilitation
• preliminary meeting
• third-party mediation
• arbitration
Objection/concern resolved?
NO
YES
Obtain ERCB disposition
LEGEND
Start or end point
Process
Decision point
Stage 1
Stage 2
Stage 3
Stage 4
Optional path

Figure A1. Participant Involvement Process

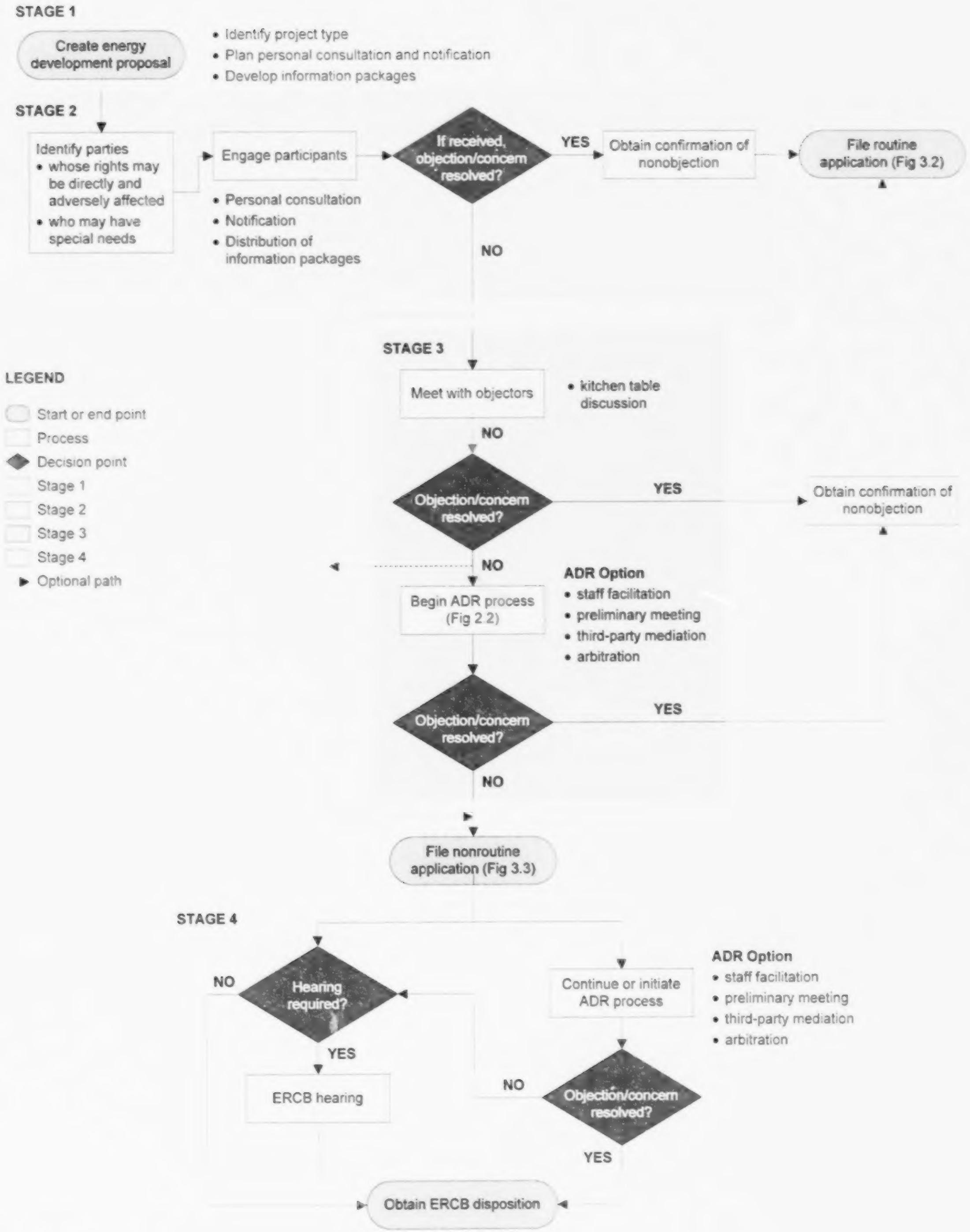

STAGE 1
Create energy development proposal
• Identify project type
• Plan personal consultation and notification
• Develop information packages
STAGE 2
Identify parties
• whose rights may be directly and adversely affected
• who may have special needs
Engage participants
• Personal consultation
• Notification
• Distribution of information packages
If received, objection/concern resolved?
YES
Obtain confirmation of nonobjection
File routine application (Fig 3.2)
NO
STAGE 3
Meet with objectors
• kitchen table discussion
NO
Objection/concern resolved?
YES
Obtain confirmation of nonobjection
NO
Begin ADR process (Fig 2.2)
ADR Option
• staff facilitation
• preliminary meeting
• third-party mediation
• arbitration
Objection/concern resolved?
YES
NO
File nonroutine application (Fig 3.3)
STAGE 4
NO
Hearing required?
YES
ERCB hearing
Continue or initiate ADR process
ADR Option
• staff facilitation
• preliminary meeting
• third-party mediation
• arbitration
NO
Objection/concern resolved?
YES
Obtain ERCB disposition
LEGEND
Start or end point
Process
Decision point
Stage 1
Stage 2
Stage 3
Stage 4
Optional path

Figure A1. Participant Involvement Process

When planning a personal consultation and notification program, the applicant is expected to speak with both local residents and other licensees to develop an effective participant involvement program engaging, at an early stage of planning, both potentially directly and adversely affected persons and those who have indicated an interest. Local authorities, ERCB Field Centre staff, and the applicant's previous knowledge of the area may help identify needs in the community.

In some areas of the province, public expectations regarding personal consultation and notification may be higher than in others. For example, when an applicant is new in an area, it should consider introducing itself to landowners who may be affected by its energy projects. Visits in conjunction with written material on its area projects might initiate two-way dialogue and set a positive tone for future dealings. In areas with a history of conflict between landowners and industry, increased communication and fresh efforts and approaches may be more effective than minimal contact.

The applicant is expected to be sensitive to the timing constraints on the public (e.g., planting, harvesting, calving seasons and statutory holidays), to minimize the cumulative impacts of energy development and to show that they have applied good planning practices with respect to the public and the environment.

During the planning of its participant involvement program, the applicant will have assessed its need to reach a broader public forum and may have determined that an information session or public open house meeting is required. When holding broader public meetings or open houses, the applicant must disclose the same project-specific information as it would have to those involved in personal consultation and notification.

If the proposal is part of a larger project, the applicant is expected to discuss the entire project and to explain how it complements other energy development in the area.

Once the applicant has developed its personal consultation and notification program, it is required to provide information to all parties identified for inclusion in its participant involvement program. For all parties this includes the applicant's project-specific information package and the letter from the Chairman of the ERCB. Where personal consultation and confirmation of nonobjection are required, the applicant must also provide the ERCB brochure *Understanding Oil and Gas Development in Alberta* and *EnerFAQs No. 7: Proposed Oil and Gas Development—A Landowner's Guide* and offer the EnerFAQs identified in Appendix 11. Where notification is required, *Understanding Oil and Gas Development in Alberta* and all the EnerFAQs identified in Appendix 11 must be offered.

Stage 2: Identifying and Engaging Potentially Affected Parties

The applicant must identify all parties whose rights may be directly and adversely affected and include them in the participant involvement program. This includes parties with a direct interest in land, such as landowners, residents, occupants, other industry players, local authorities, municipalities, and other parties who have a right to practice an activity on the land, such as Crown disposition holders.

When determining if an individual is one whose rights may be directly and adversely affected, the ERCB considers the following factors:

- Does the proposed project have the potential to affect safety or economic or property rights? Examples of such impacts include negative effects from contaminants in water, air, or soil or from noise; negative interference with livelihood or commercial activity on the land; damage to property; and concerns for the safety of persons or animals.

- Is the individual affected in a different way or to a greater degree than members of the general public?

- Is the individual able to show a reasonable and direct connection between the proposed development and the rights or interests he/she believes to be affected?

The applicant must also include those people that it is aware of who have special needs or concerns and reside beyond the consultation and notification radius indicated in Tables 5.1, 6.1, and 7.1.

The applicant is then required to engage those parties identified for inclusion in the participant involvement program. Engagement includes personal consultation with and notification to all parties whose rights may be directly and adversely affected. Engagement also means that the involvement process is conducted in a respectful, fair, and transparent manner in both the preapplication stage and throughout the life of the project.

Beyond those with whom the applicant is required to engage, the applicant is also expected to involve other parties who express an interest in the proposed development, whether they are located inside or outside the radius outlined in Tables 5.1, 5.4, 6.1, 6.2, and 7.1. Such involvement provides them the opportunity to obtain project-specific information and to understand its possible impacts.

Stage 3: Addressing Concerns/Objections

Prior to filing an application, the applicant must address all questions, objections, and concerns regarding the proposed development and attempt to resolve them. This includes concerns and objections raised by members of the public, industry, government representatives, First Nations, Métis, and other interested parties.

If there are no outstanding concerns/objections and a confirmation of nonobjection has been obtained if required, the applicant may file a routine application. If there are outstanding concerns/objections, the applicant may either attempt to resolve objections or file a nonroutine application with the ERCB.

To address unresolved concerns/objections, the applicant may choose to

- meet again with objectors and attempt to resolve issues through informal "kitchen table" discussions,
- contact the ERCB Facilitation team to request field facilitation,
- pursue resolution through a more formalized third-party mediation process, or
- request a public hearing.

These options are defined in the discussion of ADR on the next page.

Stage 4: Addressing Unresolved Concerns/Objections

If concerns/objections remain unresolved, the ERCB recommends that all applicants proceed with filing a nonroutine application and move to Stage 4 of the participant involvement process, which includes continuing with or initiating ADR concurrently while the application is being processed. At the same time, an applicant may request an ERCB hearing.

If concerns/objections continue to remain unresolved, the ERCB decides the best course of action, which may include denying the application, dismissing the objection, or holding a public hearing.

Stage 5: Obtaining ERCB Disposition

Some types of ERCB dispositions are granting a licence, denying an application, or issuing a hearing decision. All of these possible outcomes affect participants engaged earlier in the process.

Therefore, the applicant must always close the participant involvement loop even if the application is withdrawn. After disposition of the application, the applicant is expected to explain the disposition to potentially directly and adversely affected parties. This should include information on what will be done next and an explanation of how the applicant will meet any commitments made at any point of the participant involvement process, with an emphasis on ongoing information sharing.

Appropriate Dispute Resolution

The ERCB's ADR program (Figure A2) may be used to deal with concerns raised at the participant involvement stage for any *Directive 056* application. Disputes might arise between the public, landowners, and stakeholders on the one hand and a company on the other or between competing companies. The main intention of the ADR program is to assist interested parties to develop a clear understanding of concerns and issues, discuss their interests, and then develop options for resolution. With the assistance of ERCB staff and/or an independent third-party professional, parties meet and try to resolve their dispute.

ERCB Staff Facilitation

ERCB staff facilitation is an informal process in which staff assist the parties to understand regulatory requirements and generate mutually agreeable options. The use of ERCB staff as facilitators normally occurs prior to submission of a licence application but after the company has attempted to negotiate resolution. ERCB staff normally assist through direct meetings but may be able to assist in resolution through phone calls to each of the parties.

If attempts at direct negotiations break down or become problematic, ERCB staff will strongly encourage parties in a public-industry dispute to proceed to a third-party preliminary meeting. The ERCB expects parties in an industry-industry dispute to proceed directly to a third-party preliminary meeting. Participation in ADR does not preclude access to an ERCB hearing or diminish the rights of the parties.

Use of Third-Party Professionals

The use of third-party professionals typically occurs after a nonroutine licence application has been filed. Third-party professionals are also used where relationships, trust, or values are difficult to foster or there are multiple parties involved.

The first step of this component of the ADR program is a preliminary meeting in which parties, assisted by a professional mediator, discuss procedures and reach agreement on the next steps required to resolve their dispute. This ADR option can occur simultaneously (parallel path) with the ERCB's nonroutine licensing process if, for example,

- it is difficult to engage parties,
- there are concerns about timelines and an ERCB hearing date may be required, or
- there are uncertainties about who should participate.

If partial resolution or no resolution results from the facilitation, mediation, or other ADR alternative, then an ERCB disposition will be required.

The ADR program is detailed in ERCB *Informational Letter (IL) 2001-01: Appropriate Dispute Resolution (ADR) Program and Guidelines for Energy Industry Disputes*. Additional information on the use of ADR and its results are found on the ADR Web page. Questions regarding the ADR program may be directed to the ADR coordinator or to members of the stakeholder committee listed on the Web site.

ERCB Hearings

Any person, organization, or company may show through a written submission to the ERCB that its rights may be directly and adversely affected by a proposed energy development. If parties have tried to resolve outstanding concerns/objections on their own through negotiations or ADR without success, that person, organization, or company may trigger a public hearing. The party seeking to trigger a hearing must provide information to the ERCB Board to show that it has rights that may be directly and adversely affected by the Board's decision on the application. The Board does not deal with disputes related to surface rights and compensation; these are reviewed by the Alberta Surface Rights Board.

The ERCB examines each submission on a case-by-case basis to determine the potential impacts on the person(s) in question. If the Board determines that you may be directly and adversely affected by its decision, it considers that you have standing to appear at a hearing.

Once a hearing has been triggered, other interested parties, including parties that may not have standing, may participate in the hearing. Parties that do not have standing but participate in the hearing do not qualify for costs. Note that if the party that triggers the hearing withdraws from the hearing and no other party has standing, the Board may grant the application and cancel the hearing.

If the ERCB decides that it is necessary to hold a hearing to consider an application, it issues a notice of hearing directly to all persons and organizations potentially directly and adversely affected by the application to inform them of the hearing and allow them to file their submissions with the ERCB. A notice may also be published in the local newspaper to inform the general public. After considering input from the participants, the ERCB decides whether the hearing will be oral or written.

For more detail regarding the ERCB hearing process, see *Directive 029*: *Energy and Utility Development Applications and the Hearing Process*.

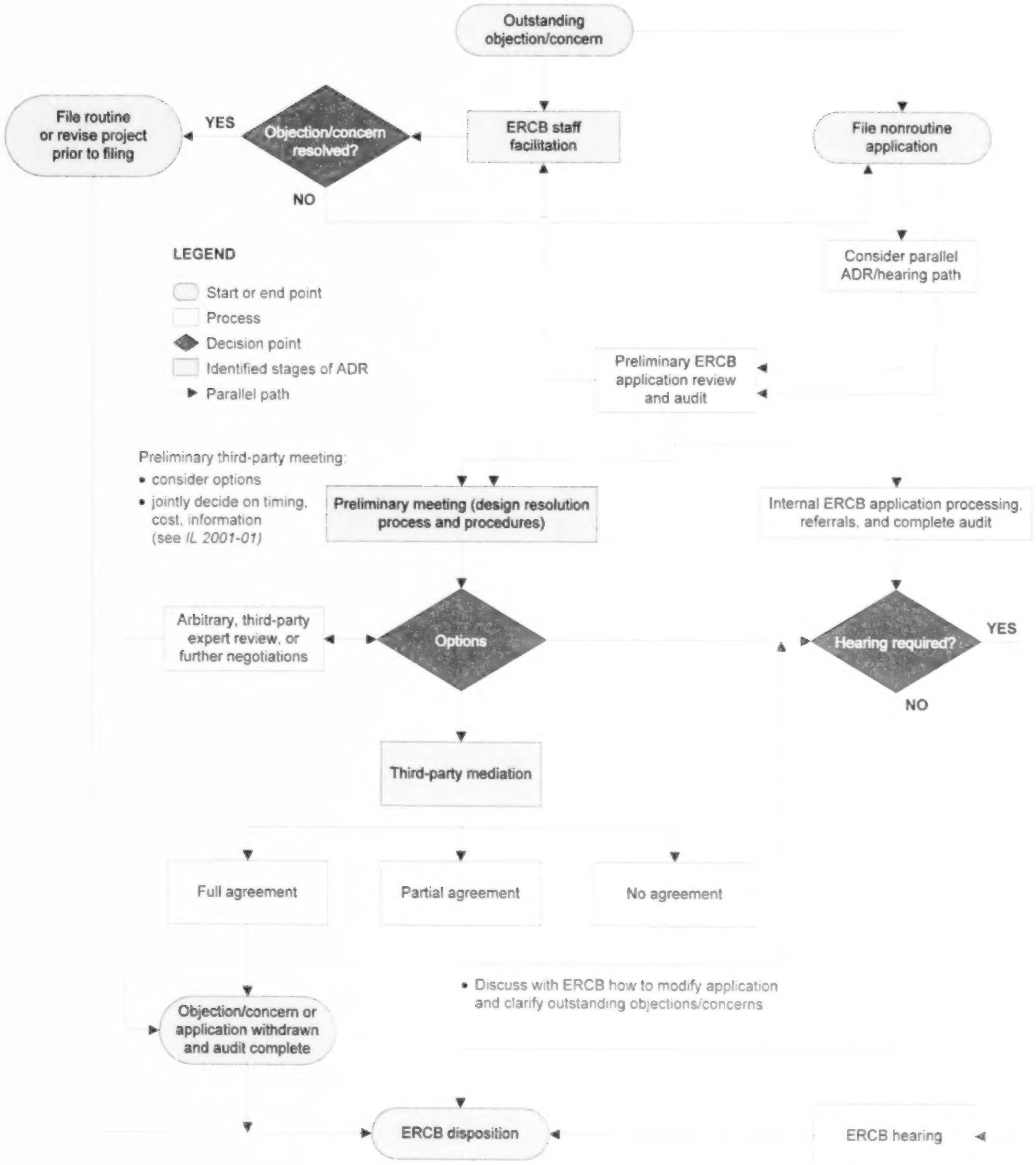
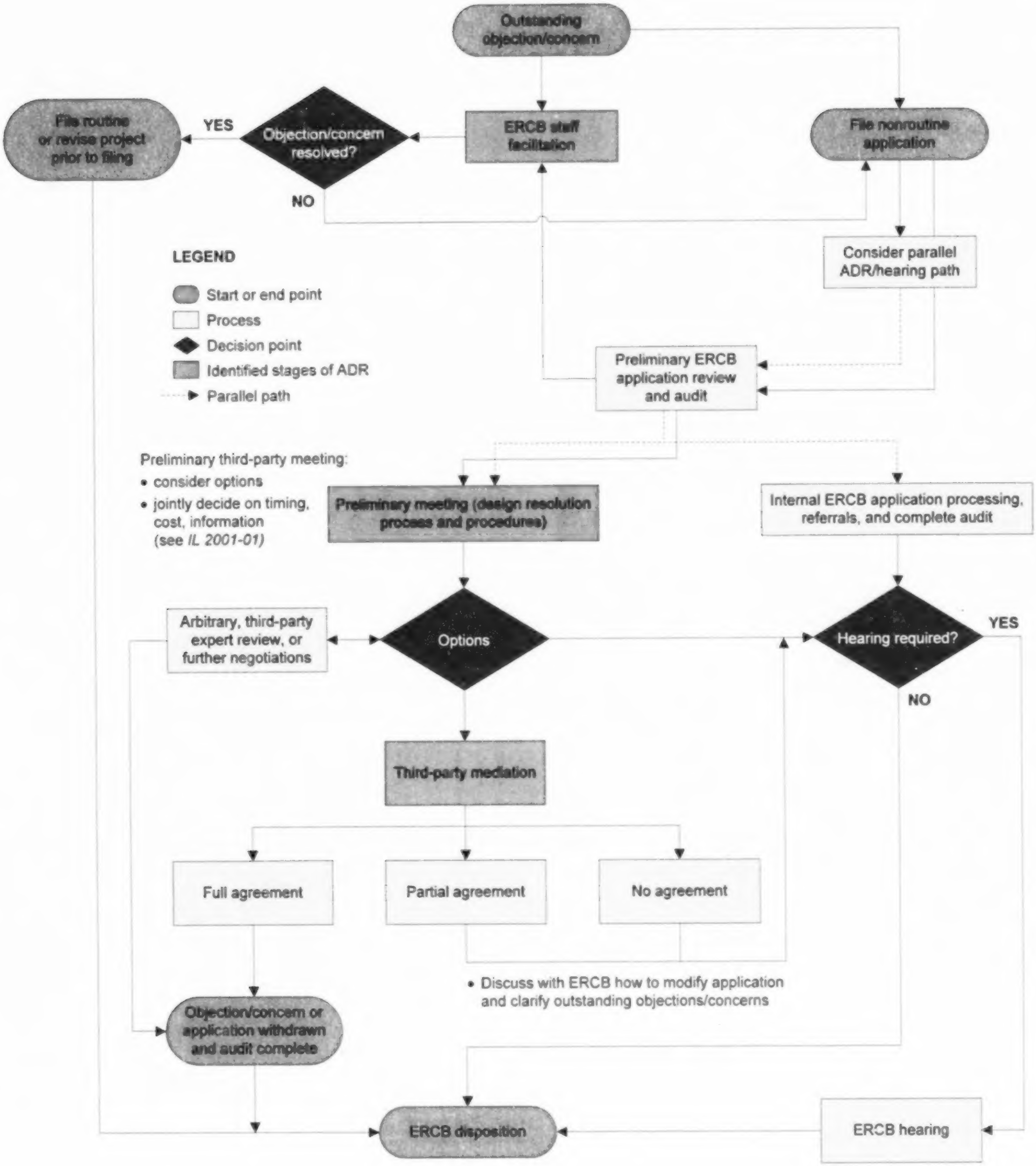

Outstanding objection/concern
File routine or revise project prior to filing
YES
Objection/concern resolved?
NO
ERCB staff facilitation
File nonroutine application
Consider parallel ADR/hearing path
LEGEND
Start or end point
Process
Decision point
Identified stages of ADR
Parallel path
Preliminary ERCB application review and audit
Preliminary third-party meeting:
• consider options
• jointly decide on timing, cost, information (see IL 2001-01)
Preliminary meeting (design resolution process and procedures)
Internal ERCB application processing, referrals, and complete audit
Arbitrary, third-party expert review, or further negotiations
Options
Hearing required?
YES
NO
Third-party mediation
Full agreement
Partial agreement
No agreement
• Discuss with ERCB how to modify application and clarify outstanding objections/concerns
Objection/concern or application withdrawn and audit complete
ERCB disposition
ERCB hearing

Figure A2. ADR Process


Outstanding objection/concern
File routine or revise project prior to filing
YES
Objection/concern resolved?
NO
ERCB staff facilitation
File nonroutine application
Consider parallel ADR/hearing path
LEGEND
Start or end point
Process
Decision point
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Preliminary ERCB application review and audit
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Preliminary meeting (design resolution process and procedures)
Internal ERCB application processing, referrals, and complete audit
Arbitrary, third-party expert review, or further negotiations
Options
Hearing required?
YES
NO
Third-party mediation
Full agreement
Partial agreement
No agreement
• Discuss with ERCB how to modify application and clarify outstanding objections/concerns
Objection/concern or application withdrawn and audit complete
ERCB disposition
ERCB hearing

Figure A2. ADR Process

Appendix 13 Baseline Water Well Testing Requirements for Coalbed Methane Wells Completed Above the Base of Groundwater Protection

On April 6, 2006, Alberta Environment announced the new Standard for Baseline Water Well Testing for Coalbed Methane/Natural Gas in Coal Operations (AENV Standard), which became effective May 1, 2006. As the ERCB is responsible to implement and enforce the AENV Standard, on May 8, 2006, it issued *Directive 035*, which modifies ERCB well application requirements. This was introduced to *Directive 056* as a process clarification in July 2006 and is included as Appendix 13 in this edition of *Directive 056*.

Baseline testing of water wells is mandatory for companies wanting to drill or recomplete a well to produce coalbed methane (CBM) above the base of groundwater protection (BGWP). The testing will gather background information on the water well's production capability and water quality.

Overview of Application Process

Directive 056 sets out the application, participant involvement, and technical requirements that must be met when applying for a new well licence. In addition, applications for a new licence for a CBM well to be completed above the BGWP require that

- the application be filed as a Category B application (B140), as specified in Table 7.1 of *Directive 056*, with a Code 22 for CBM;
- the Applicant File Number/Applicant Reference on Schedule 1 include the text "CBMABGW"
- applicants submit a cover letter confirming that the application as submitted is to drill and complete a CBM well above the BGWP and that prior to application, the offer to test all active water wells and observation wells was made for any wells within a 600 metre (m) radius of the proposed CBM well or the nearest water well within a 600 to 800 m radius if none is identified within 600 m; and
- applicants identify all the active water wells and observation wells, taking into consideration all sources of information, including (but not limited to)
    - AENV data/information,
    - ground truthing,
    - contacting landowners/occupants, and
    - submitting a survey plan or a map with the application that shows the location of all of these wells within the radius referred to above.

Latitude and longitude coordinates (NAD 83) of active water wells and observation wells are required on survey plans or maps.

Applications must include the following documents or be subject to closure in accordance with Section 3.6:

Document	Attachment Type	Attachment Description
Cover letter	Miscellaneous (Ext)	*Directive 035* cover letter
Routine survey plan, including CBM water well information	Survey plan	Survey plan and *Directive 035* information
or		
Separate survey plan with CBM water well information only	Miscellaneous (Ext)	*Directive 035* survey plan
or		
Map (GPS) with CBM water well information	Miscellaneous (Ext)	*Directive 035* map

Survey Plans/Maps for CBM Wells

In addition to the survey plan requirements indicated in Section 7.10.1, applicants must indicate on the survey or attach survey plans or maps that show

- any active water well or water observation well within a 600 m radius of the proposed well, or if none is identified within a 600 m radius, the nearest water well or observation well within a 600 to 800 m radius, and
- latitude and longitude coordinates (NAD 83) of active water wells and observation wells on survey plans or maps.

Environmental Requirements

In addition to the requirements indicated in Section 7.10.13, applicants must

- submit a cover letter as described above; and
- identify and document (for auditing purposes)
    - offers to test water and observation wells made prior to application, indicating landowner/occupant and the date of offers;
    - the corresponding acceptances and refusals;
    - in lieu of testing, any water well test result provided by the landowner that complies with the AENV Standard; and
    - if a landowner/occupant refuses to have his/her water well tested, written confirmation from the landowner that testing is not required; if unable to obtain written confirmation, the applicant must diarize the landowner/occupant refusal, provide them with a copy of a notice describing this protocol, and retain a copy.

If the water well has been tested within two years and the landowner/occupant provides a copy of the test showing that it conformed to the AENV Standard's protocols, testing is not required unless requested by the landowner.

If an applicant cannot meet these environmental requirements, it must answer "No" to Schedule 4, Section 11: Surface Impact, question 2, and submit a nonroutine application.

Water Well and Observation Well Testing

When conducting water well testing, applicants must

- test water and observation wells in accordance with the AENV Standard prior to drilling the well; and
- if the wells have been tested and two months have elapsed, confirm that the water well testing data and analysis have been submitted to AENV and the landowner/occupant. If delays occur, confirm that the applicant provided an explanation to AENV and the landowner/occupant and give the revised timeline for testing the water wells that the applicant has committed to.

Audit Documentation—Additional Requirements

In addition to the requirements indicated in Section 7.11.7.1 and Table 7.6, applicants must meet the following requirement:

- If CBM above BGWP information is not on the survey plan, the applicant must submit a separate survey plan or map showing the locations of all the active water wells and observation wells within the radius referred to above. Latitude and longitude coordinates (NAD 83) of active water wells and observation wells are required on maps.

In addition to the requirements indicated in Section 7.11.11.3 and in Table 7.6, applicants must

- submit documentation demonstrating that all the requirements for the implementation of the AENV Standard as listed under Environmental Requirements above have been completed prior to application. If water well testing was completed prior to application submission, provide information confirming that those tests were completed in accordance with the AENV Standard and that results were submitted accordingly.

Compliance Assurance

In order to ensure that applications are correctly submitted, the ERCB will close any *Directive 056* CBM well licence applications that target completions above the BGWP that do not meet these new requirements. Additionally, audits will be conducted to ensure that applicants have met the requirements of both *Directives 056* and *035* and the AENV Standard.

For any noncompliances associated with *Directive 056*, the ERCB will initiate enforcement action in accordance with *Directive 019: ERCB Compliance Assurance—Enforcement* (available on the ERCB Web site) and Table 4.1. The specific Wells – Technical noncompliant events associated with the requirements reiterated in this appendix are as follows:

- Failure to submit a survey plan that meets all applicable requirements, which is assessed as low risk. For the purpose of this appendix, it includes
  - no survey plan with CBM above the BGWP water well information, or no separate CBM above the BGWP survey plan or map.
- Failure to meet *Directive 056* environmental requirements prior to filing the application, which is assessed as high risk. For the purpose of this appendix, this includes
  - no offer to test water wells prior to application,
  - no testing of water wells conducted prior to drilling, and
  - test results not submitted to landowner/occupant or AENV in accordance with the AENV Standard.

Further Information

For additional information on the AENV Standard, see the AENV Web site at http://www.waterforlife.gov.ab.ca/coal/index.html. You may also contact the Alberta Environment Education and Information Centre: phone 780-427-2700 (toll free by first dialing 310-0000); fax (780) 422-4086; e-mail env.infocent@gov.ab.ca.

For further information on ERCB *Directive 035* or *Directive 056* requirements and for further updates and clarifications, check the ERCB Web site www.ercb.ca and contact the following ERCB groups:

- Applications Branch, Facilities Applications Group, Directive 056 Help System—Help Line: Phone 403-297-4369; fax 403-297-4117; e-mail Directive56.help@ercb.ca
- Compliance, Environment, and Operations Branch, Environment Group, regarding completions or recompletions of CBM wells above the BGWP: phone 403-297-8330; fax 403-297-2691; e-mail ercb.EnviroServices@gov.ab.ca.